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ABSTRACT

An analysis of the extent and severity of teenage unemployment showed that from 1949-80 the unemployment rate of white male teenagers remained about three times higher than that of adult males. Much of the difference in these rates was found to be attributed to teenagers voluntarily leaving jobs and the labor force. The relatively small group of unemployed teenagers was heavily concentrated among poor and black people. The need for teenage employment was also ascertained. It was concluded that estimating need required a detailed analysis of the educational achievement, labor force status, and demographic characteristics of teenagers. It was estimated that approximately 962,000 economically disadvantaged teenagers (aged 16-21) with a high school degree or lower attainment were in most need of Federal assistance. Identified causes of teenage unemployment and labor force non-participation were family income and living in a house receiving Aid for Families with Dependent Children. Racial differences in unemployment seemed to be tied to discouragement and family background. Teenage unemployment did not appear to have an adverse effect on future labor market opportunities. A teenager's inability to find a job seemed to have an effect on inclination to commit a crime. (YLB)

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BY THE U.S. GENERAL ACCOUNTING OFFICE

Report To The Honorable Charles B. Rangel United States House Of Representatives

Labor Market Problems Of Teenagers Result Largely From Doing Poorly In School

Measured unemployment is not a good indicator of how many teenagers are having serious labor market problems. This conclusion was reached by GAO which also reports that not doing well in school is a major component of this problem.

GAO could find no evidence that being out of work occasionally as a teenager has any adverse effect on future job success or on the tendency to commit crime while a teenager.

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UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

PROGRAM ANALYSIS
DIVISION

B-163922

The Honorable Charles B. Rangel
House of Representatives

Dear Mr. Rangel:

This report responds to your request that the General Accounting Office investigate the extent and severity of the teenage unemployment problem. The study is based on both published reports and original work. It includes analyses of the high rate of teenage unemployment, teenagers in need of labor market services, teenage unemployment and participation, the effects of teenage unemployment on crime and future opportunities, and the mix of services needed to combat teenage labor market problems.

We requested comments from the Department of Labor, the Department of Health and Human Services, the Department of Education, and the Council of Economic Advisers. The comments of all agencies except the Council of Economic Advisers, which did not furnish comments, along with our response to them, are included in the report.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of the report. At that time we will send copies to interested parties and make copies available to others upon request.

Sincerely yours,

Morton A. Myers

Morton A. Myers
Director

GENERAL ACCOUNTING OFFICE
REPORT TO THE HONORABLE
CHARLES RANGEL
UNITED STATES HOUSE OF
REPRESENTATIVES

LABOR MARKET PROBLEMS OF TEENAGERS RESULT LARGELY FROM DOING POORLY IN SCHOOL

DIGEST

In recent years, teenage unemployment, particularly for black teenagers, has caused concern among policymakers. Underlying this concern has been the sharp increase in the black teenage unemployment rate since 1970 and a coincident increase in crime among all teenagers. This report results from Congressman Rangel's request that the General Accounting Office (GAO) investigate the extent and severity of the teenage unemployment problem. It includes an analysis of

--the significance of the high rate of teenage unemployment,

--the size and characteristics of the group of teenagers in need of help,

--the causes of teenage unemployment and labor force participation,

--the racial differences in teenage unemployment and labor force participation,

--the effects of teenage unemployment on future labor market opportunities and criminal behavior, and

--the mix of services needed to combat these problems.

THE SIGNIFICANCE OF THE HIGH TEENAGE UNEMPLOYMENT RATE

From 1949-80, the unemployment rate of white male teenagers remained about three times higher than that of adult males, and because of this, some analysts have assumed that teenagers have serious and widespread labor market problems. However, detailed analyses of available information indicate that much of the difference in these rates can be attributed to teenagers voluntarily leaving jobs and the labor force. Many teenagers do have significant labor market problems, but the unemployment statistics do not, by themselves, indicate well the number of teenagers who are experiencing them (see page 3).

It is necessary to distinguish between teenagers' employment status and labor market problems. In addition to those who are involuntarily unemployed, many teenagers with employability problems (both current and potential) are employed and others are outside the labor force.

Unemployed teenagers are only a small fraction of all teenagers (see page 5). Unfortunately, however, this relatively small group is heavily concentrated among poor and black people. Thus, for black teenagers, high unemployment in itself indicates a serious labor market problem (see page 13).

NEED FOR TEENAGE EMPLOYMENT AND TRAINING SERVICES

Ascertaining the need for teenage employment services is a subjective, but critical, step in understanding the importance of the teenage unemployment problem. GAO provided a range of estimates (see page 33).

GAO concludes that using labor force and employment status as the major criteria for need is not sufficient. A large number of teenagers lack the basic reading, writing, and computation skills required to compete and succeed in the job market (see page 34). Estimating need thus requires a detailed analysis of the educational achievement, labor force status, and demographic characteristics of teenagers. Using these characteristics, GAO estimates that approximately 962,000 economically disadvantaged teenagers (16-21 years old) with a high school degree or lower attainment are most in need of Federal assistance (see page 39). This does not mean that a program to provide the assistance will have to serve this many teenagers every year. Rather, the number in need in subsequent years will depend on how long the average teenager requires assistance (see page 42).

FACTORS THAT CAUSE TEENAGE UNEMPLOYMENT

GAO attempted to identify the important causes of teenage unemployment and labor force participation (see page 47).

8

This analysis showed that family income and living in a house that receives Aid for Families with Dependent Children (AFDC) are closely tied to unemployment and nonparticipation among all teenagers.

RACIAL DIFFERENCES IN TEENAGE UNEMPLOYMENT

GAO found that racial differences in teenage unemployment outside the South have been very large at least since 1940. Surprisingly, non-white unemployment was lower in the South than white unemployment from 1940-1950. Since 1970, however, the difference has increased abruptly in all regions of the country (see pages 13-16).

GAO could find little evidence of what caused racial differences in teenage labor participation. Discouragement appears to be only a small part of the problem (see pages 17-20). However, teenagers who lack personal qualifications to hold a job may, after a few bad employment experiences, drop out of the labor force. Thus, discouragement due to poor qualifications may be a factor (see chapter 4).

Analysis of other causes provides some additional evidence on this issue. It shows that, among out-of-school teenagers, almost three-fourths of the racial difference in labor force participation is explained by family background. The analysis also suggests that the growing percentage of black teenagers in households receiving AFDC benefits since 1960 may have been a cause of the relative worsening of their labor force participation and unemployment rates in recent years.

EFFECTS OF TEENAGE UNEMPLOYMENT ON FUTURE LABOR MARKET SUCCESS AND ON CRIME

Teenage unemployment does not seem to have an adverse effect on future labor market opportunities, even for out-of-school teenagers (see page 64).

The claim that a teenager's inability to find a job can have an effect on his or her inclination to commit a crime seems plausible. However, evidence on the causes of crime does not shed any light on how important the effect of unemployment is. The studies that suggest it may be important are flawed statistically and the studies that do not have these flaws deal with things other than unemployment (see pages 69-75).

Inability to find a job is not the only factor potentially contributing to crime. Being unable to qualify for a job would logically seem much more conducive to criminal behavior, but, because of insufficient data, GAO was not been able to analyze this group. Teenagers unqualified for jobs are a serious social problem even if they do not commit crimes (see chapter 3).

Finally, the difference between low wage jobs and unemployment might be important. A "job-qualified" teenager might not be driven to crime by a moderately difficult period of unemployment, but depending on aspirations, the prospect of a lifetime of modest or low paying jobs might make crime attractive.

CONCLUSIONS

Based upon analysis of changes in the employment of teenagers, GAO concludes that the recent Federal emphasis on subsidized jobs should be shifted toward finding services that will improve scholastic achievement in order to make teenagers more qualified for jobs. Trying to find out how to bring about changes in scholastic achievement is difficult. Therefore, GAO has no recommendations for specific remedial programs. Recognition is given to the possible need for additional research into the precise composition of the remedial and informational service mix for disadvantaged youth.

The analysis indicates that among out-of-school teenagers, living in a welfare household had a large effect on the likelihood of labor force participation. This could mean that the work disincentives associated with the current AFDC program may be reducing the labor force participation of out-of-school teenagers, in general, and of black teenagers in particular. A possible remedy for this problem would be changing the rules of the AFDC program to ignore all earnings of dependent children regardless of school status when determining the family's entitlement. The labor force participation of AFDC teenagers might then increase. GAO thinks that thought should be given to making changes in this direction.

GAO concludes that research and development activities are needed in the following areas:

--developing data bases that contain detailed historical information on educational achievement and labor force information,

--analyzing the types of jobs performed by teenagers and young adults to assess the quality of the work experience gained, and

--developing special surveys of teenagers that analyze the connection between labor market experience and criminal behavior.

AGENCY COMMENTS

GAO sent copies of the draft report to the Department of Education (ED), the Department of Health and Human Services (HHS), and to the Department of Labor (DOL). Their comments and GAO's responses are in appendix III.

ED agreed with all of GAO's conclusions and made some detailed recommendations for particular programs. GAO does not concur with all its suggestions.

HHS disagreed with GAO that the earnings of out-of-school youths in the AFDC program be ignored when the family's benefit amount is determined. HHS feels that the existing regulation is an important incentive for youths to stay in school. GAO understands HHS' reasoning but believes that a revised regulation could be tested in several States. GAO recognizes that youths need to obtain an adequate skill level in reading and mathematics before leaving school. However, GAO does not feel that eliminating the work disincentive in the AFDC program will tempt significant numbers of affected youth who are benefitting from staying in school to drop out. On the other hand, GAO does feel that many recipient youth who have left school and are not working will enter the labor force--a gain to society and to the individual. DOL agrees with GAO that the work disincentive be eliminated (see appendix III).

DOL does not agree with the GAO conclusion that other ways of identifying and delivering education and training services to disadvantaged teenagers should be studied, nor does it agree that more research on the link between teenage unemployment and crime should be conducted. GAO believes that research in both areas is badly needed.

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CHAPTER 1

INTRODUCTION

Teenage unemployment has been one of the long-lasting concerns of policymakers. In recent years, this concern has increased. The official measured rate of teenage unemployment has always been considerably higher than that of adults; the rate of unemployment among black teenagers is even higher. Government programs, first established in the early 1960s to focus on labor market problems of teenagers, have greatly increased in the last few years. Underlying these escalating concerns has undoubtedly been the sharp increase in measured unemployment among black teenagers since 1970, along with a coincident rising crime rate among all teenagers.

OBJECTIVES, SCOPE, AND METHODOLOGY

This report results from Congressman Rangel's request that we study the private and social costs of teenage unemployment and determine the costs of mounting a job and training program to combat the problem. Before estimating program costs, however, we needed to find out more precisely who among all teenagers needs help from the Government, how those people can be helped, and the best way to provide that help. For social costs associated with teenage unemployment, we summarize what is known and not known and describe how decisionmakers can apply this knowledge. All this information is a prerequisite to understanding the costs of teenage unemployment and must be successfully handled before any comprehensive cost analysis can be made.

In defining more precisely the nature of the problem, we attempted in chapters 2 and 4 to discover exactly why teenagers are unemployed and how serious a problem it represents. We looked at the determinants of racial differences in unemployment. To assess the factors causing teenagers to be unemployed, we used multiple regression analysis 1/ as well as a detailed analysis of labor force, educational, and demographic data supplied by the Current Population Survey (CPS) 2/ and the Department of Labor (DOL). We were then able to estimate how many teenagers could benefit from job and training programs.

1/Multiple regression analysis is a statistical technique commonly used to isolate the individual influence of several variables on one particular variable. This technique is used in chapter 2 (p. 20-21) and in chapter 4, where our own work in presented in detail.

2/The CPS is the official monthly household survey conducted by The Bureau of the Census. Numerous official statistics and reports are derived from the survey.

In formulating our need analysis (chapter 3), we reviewed other attempts at defining need and assessed other researchers' criteria. We present many need estimates of our own using varying criteria. The criteria used included (1) labor force status and demographic data, (2) length and reasons for unemployment, and (3) educational attainment and achievement. On the basis of our analysis in chapters 2 and 4 these varying criteria were then analyzed and critiqued, and we selected our most preferred estimates of the number of teenagers in need. An important by-product of our analysis was developing a better approach toward estimating the size and characteristics of those teenagers with serious labor market problems. The approach stresses measures of illiteracy as much as, if not more than, measures of unemployment.

To determine the social costs of teenage unemployment we examined whether effects beyond immediate loss of income exist and whether there is a link between teenage unemployment and crime. To determine possible long run effects of teenage unemployment, we used the findings of studies that used longitudinal data, i.e., data gathered by researchers who observe the same individuals in situations over a long period. When trying to discover whether an unemployed teenager would turn to crime, we discovered limitations with the statistical methodology used by the various researchers we studied (see chapter 5.)

Most of our findings involve negative assertions and clarifications rather than positive statements about how a policymaker can take action to cure a problem. For example, measured teenage unemployment turned out, on closer inspection, not to be a major indicator of the labor market problems facing teenagers.

We feel that the basic problems relating to the employability or the teenager, both as a teenager and later in the post-teen period, should be the major focus of public policy. This is not to say that the problem of a job-ready teenager finding a job is nonexistent, but that it has a lower priority than the employability issue. Unfortunately we were not able to identify very precisely who the teenagers are that have serious employability problems and what the underlying causal factors were. We did attempt a crude need analysis (chapter 3) that presents estimates of the overall size of this population of youth and their distribution by poverty and non-poverty status. We were not able to correlate measures of employability with measures of teenage crime or future labor market performance. Our findings with regard to these two dimensions of social cost relate to the official measures of unemployment, not employability.

CHAPTER 2

THE TEENAGE UNEMPLOYMENT PROBLEM: AN OVERVIEW

In this chapter we examine four of the five main aspects of our study: the significance of the high measured rate of teenage unemployment, its causes, the racial difference in both unemployment and labor force participation, and whether effects beyond immediate loss of income exist (the social costs). The fifth aspect, identifying the number of teenagers needing assistance from Government programs, will be discussed in chapter 3.

THE HIGH MEASURED RATE OF TEENAGE UNEMPLOYMENT

Figure 1 shows the annual movements and trends in the white male teenage unemployment rate and the rate for all adult males 20 years old and over, from 1948 to 1980. 1/ Note how much higher the unemployment rate is for white teenage males than for adults--about three times higher over the entire period.

Table 1 shows part of the reason why the teenage rate is not as low as the adult rate. For example, examine the new entrant rate. Because many more teenagers are just beginning to look for a job, they have a greater chance of incurring a period of unemployment from this source. Similar reasoning lies behind the unemployment generated by labor force turnover (re-entrant rate) and leaving a job voluntarily. Many teenagers leave the labor force, then re-enter simply because they primarily go to school, not work. 2/ Note, finally, that there is hardly any difference in the rates for involuntary separation.

However, the levels of these rates (quit, entrant, and re-entrant) do not need to be as high as they are. For example, in England teenage unemployment is much lower. Less voluntary job

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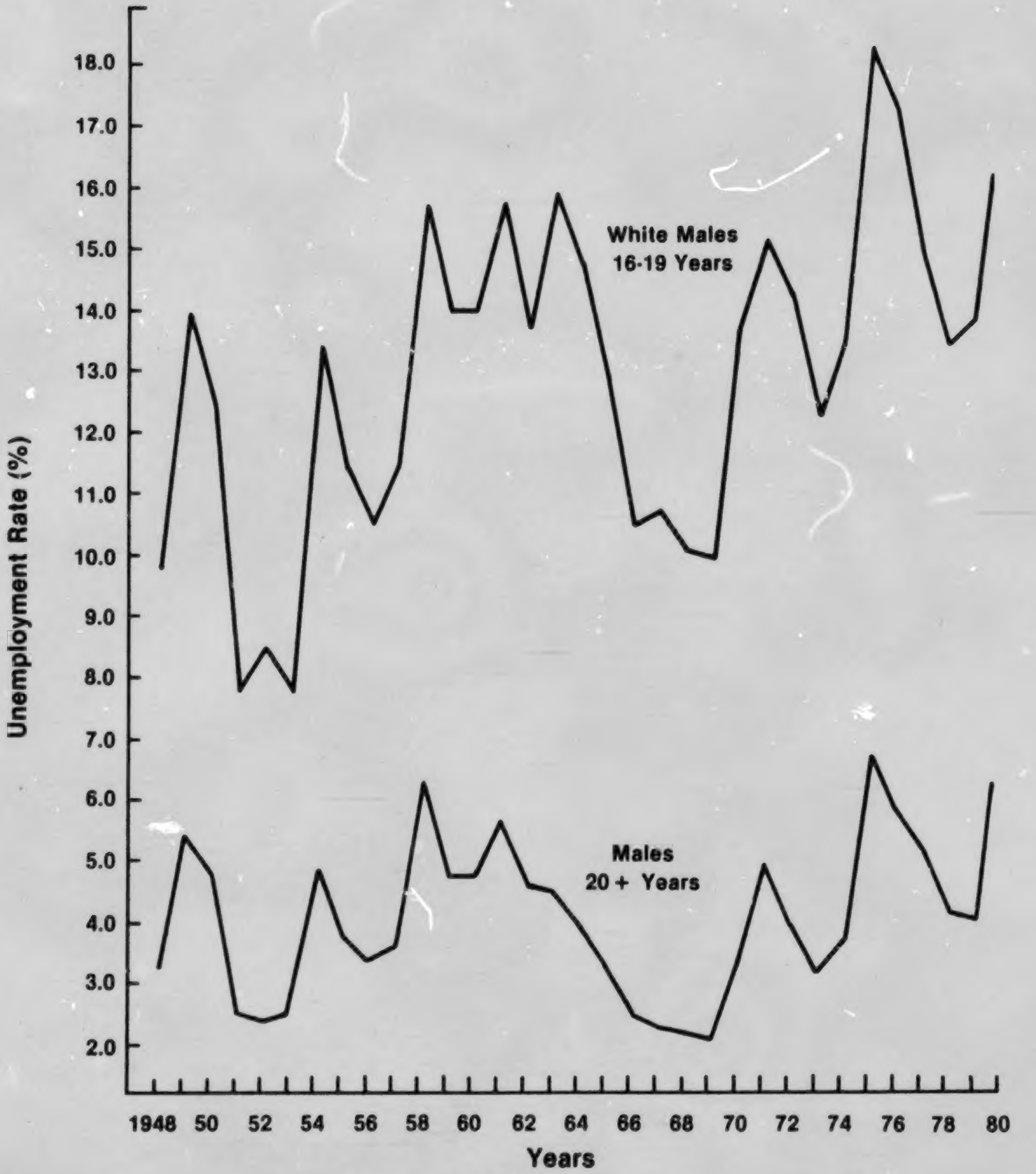
1/We restrict the comparison here to white teenagers because black teenagers have a much higher rate of unemployment. In this section we wish to focus mainly on the age factor; racial disparities will be analyzed in the next section. We also pay most attention to males, because female labor force participation decisions are much more complex.

2/The new entrant rate in table 1 exaggerates the importance of this source, relative to the re-entrant source. According to the Bureau of Labor Statistics, a new entrant is one who has never held a full-time job, and is looking for work. Since most teenagers hold part-time jobs, many of the new entrant unemployed have probably been in the labor force already, as part-time job holders.

Figure 1

Trends in the White Male Teenage Unemployment Rate and the Rate for All Adult Males 20 Years and Over, 1948-80



Source: *Economic Report of the President, 1981*, pp. 267, 269.

Table 1

Rate of Unemployment, by Sources of Unemployment Annual Average, 1980, By Both Sexes, 16-19, and Males, 20+ a/

Source of Unemployment	Both Sexes, 16-19	Males 20+
	(percentage)	
Involuntary separation	4.1	4.2
Voluntary job turnover	1.7	0.6
Re-entrant	5.1	0.9
New entrant	6.8	0.2
TOTAL (Unemployment)	17.7	5.9

a/This table shows the number in each subgroup of unemployment divided by the total civilian labor force for the total age group.

Source: Employment and Earnings, vol. 28, no. 7, Jan. 1981, Bureau of Labor Statistics, Washington, DC.

and labor force mobility occurs there, and probably lower new entrant rates as well. For example, one study 1/ reports that in Britain most formal apprenticeships (which are probably a much more important source of skilled labor than in the U.S.) must be started by the time a person is 16. Thus, job shopping or taking a few years to make up one's mind can be very costly.

The comparison between the United States and England suggests that two socioeconomic factors tend to make teenage unemployment higher in the U.S. First, a high degree of social and economic mobility either exists or is perceived to exist among teenagers. Fewer are following "in their fathers' footsteps"; many who do quickly decide to pursue other employment possibilities. This exploratory activity tends to generate additional unemployment among teenagers as well as young adults. Second, the U.S. has a very high level of per capita income. Thus, most U.S. teenagers can choose to have more leisure time than their foreign counterparts. Having a job is not a necessity for most U.S. teenagers and this attitude generates the high labor force turnover rate as shown in table 1.

1/R. Layard, "Youth Unemployment in Britain and U.S. Compared," presented at the National Bureau of Economic Research Conference on Youth Unemployment, Airlie, Virginia, May 17-18, 1979.

One sociologist, after studying teenage unemployment in inner cities, concluded

> Many boys are underemployed . . . because they value leisure as much as money, which leads them to seek only as much work as is needed to get by with enough of each. Because many youth support only themselves, their preference for underemployment may be based on a reasoned calculation of self-interest. Why should we expect ghetto youths to settle down at age 17 or 18 to the discipline of a year-round-full-time job that, in effect, denies them the leisure for "identity building" we extend to college youths? 1/

Other evidence suggests that teenager labor force turnover is mostly voluntary. According to CPS data, when teenagers were asked what the main reason was why they did not work at all the previous year or only part of the year (1 to 49 weeks), only a very small percentage replied, "could not find work" (the percentage of adults responding with this reply was much greater). Among teenagers who were not in the labor force at the time of the survey, only about 2 percent responded that they wanted a job but could not find one. 2/ Thus, the portion of the difference between teenage and adult unemployment rates due to voluntary job and labor force turnover may not represent the magnitude of welfare loss we usually associate with adult unemployment. 3/

Low labor force participation need not necessarily generate high unemployment. It does so because teenagers tend to alternate between being in and out of the labor force. For example, in 1977 about 72 percent of all students 16 to 21 years old participated in the labor force at some time during the year. However, at any specific time during that year only about 46 percent

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1/Edwin Harwood, "Youth Unemployment--A Tale of Two Ghettos," The Public Interest, no. 17, Fall, 1969, pp. 78-87.

2/We assert that inability to find a job is not an important factor in the high teenager labor force turnover. Some economists disagree with our view; see Kim Clark and L. Summers, "Dynamics of Youth Unemployment," a paper presented at the National Bureau of Economic Research Conference on Youth Unemployment, May 17-18, 1979, Airlie, Virginia.

3/These voluntary factors probably do not explain the entire difference between the teenage and adult rates. Mincer and Leighton, Labor Turnover and Youth Unemployment, Working Paper #378 (Cambridge, Massachusetts: National Bureau of Economic Research, 1979), show that for out-of-school teenagers and adults, factors like being new to the labor market account for some of the difference.

were participating. For adult males the two percentages were practically identical. 1/

Teenage unemployment differs from adult unemployment in two other ways relevant for welfare comparisons. Data on the incidence and duration of unemployment show that teenagers have a much higher incidence but a lower average duration per unemployment period than adults. One study 2/ estimates that for male teenagers in 1976 the average completed period of unemployment was about 7 weeks, while for males 25 to 58 years old it was 11 weeks. Data on part-time/full-time employment show that among employed male teenagers about 67 percent are employed in part-time jobs while the corresponding figure for employed adult males 25 to 54 is only 3.5 percent. A person undergoing a short period of unemployment in search of a part-time job is not in the same position as one who suffers a longer period in search of a full-time job. The "need" for a job may be less with the former; therefore, all the pressures and tensions connected with unemployment may also be less.

We do not mean to imply that serious periods of teenage unemployment are not a problem; they are. However, the periods occur infrequently among all teenagers. Table 2 shows the magnitude of the problem of serious periods of teenage unemployment. Although they are not the only determinants of the seriousness of a period of unemployment, the family income level, the school status, and the length of unemployment are important. If we count as serious all periods lasting 11 weeks or more and include the periods of both above poverty and in-school teenagers, the total number of teenagers who had serious unemployment experiences in 1977 comes to about 1.3 million (about 8 percent of all teenagers in 1977). If we take 27 weeks as the cut-off point for a serious period of unemployment and count only the unemployment periods of teenagers who are both out of school and from families with poverty level incomes, the number drops to 74,000 (only 0.5 percent of all teenagers). 3/

1/The fact that labor force turnover underlies the high teenage rate has been documented by a number of economists. See Mincer and Leighton, ibid.; Edward Kalachek, The Youth Labor Market, Policy Papers in Human Resources and Industrial Relations, #12 (Ann Arbor, Michigan, The Institute of Labor and Industrial Relations, University of Michigan, 1969).

2/Clark and Summers, "Dynamics of Youth Employment," table 1.3, p. 11.

3/These are overestimates of long term unemployment among teenagers when the economy is at full employment. The year for which these figures apply, 1977, was definitely still a recession year, even though the economy was recovering from the trough of the recession in 1976.

Table 2

Incidence and Duration of Unemployment in 1977, By School Status and Family Income: All 16-19 Year Old Youths (000s omitted)

School status	Poverty Income No period or < 11 weeks	11-14 weeks	15-26 weeks	27+ weeks	Above Poverty Income No period or < 11 weeks	11-14 weeks	15-26 weeks	27+ weeks
Major Activity: In school	1,179	22	38	24	8,099	114	151	163
Major Activity Other	746	31	71	74	4,019	178	281	203

Source: Special tabulation from the public use tape of the Current Population Survey of March 1978. The teenage population is limited to those who had not completed more than high school.

However, in absolute terms and in terms of black teenagers, the picture is not so encouraging, even if we just focus on serious periods of unemployment. Also, as we have stressed, the problem of teenage labor market adjustment is much larger and more complex than indicated by just looking at serious periods of measured unemployment.

For most teenagers the significant problems relate to the less measurable aspects of labor market behavior--qualifying for and holding a job and making a successful transition from school to work. The teenager must try to get a good education in basic verbal and mathematical skills while in high school. He or she must consider the options after high school--vocational training, college, a job, or the military--and find out how satisfactory they are. Teenagers who have serious problems in any of these areas cut across all employment status categories. 1/ Some will suffer serious long-term unemployment but others will incur only short periods of unemployment, be outside the labor force, or employed (see chapter 3).

CAUSES

Although most periods of measured teenage unemployment are not lengthy, we would still like their incidence and duration to be minimal. Once a teenager begins to look for a job, the process should take as little time as possible.

Figure 1 (see p. 4) shows that teenage unemployment, like adult unemployment, has a significant cyclical component. The declines and slowdowns in aggregate demand that occurred in 1953-54, 1957-58, 1969-71, and 1973-75 are clearly reflected in swings in the teenage rate. Indeed, the cycle has a larger effect on teens than on adults, not because teenagers are in cyclically sensitive industries, but because firms tend to have so little invested in them (e.g., training on the job, experience, hiring costs, etc.). Thus, at the first sign of slack demand, teenagers are laid off. Adults, who tend to be in cyclically sensitive industries, have valuable training as well as other attributes that firms do not want to lose. Therefore, many adults are not laid off until the decline in demand becomes more protracted.

When a level of unemployment is reached such that further increases in aggregate spending will cause accelerating inflation, that rate is usually referred to as the "full employment" unemployment rate or, in some instances, as the "natural rate" of unemployment. This does not mean that public policy can do nothing to reduce unemployment further but that such a reduction cannot be done by simply increasing the general level of monetary

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1/Employed; looking for work; out of the labor force, want a job; out of the labor force, do not want a job.

demand for goods and services. Other factors must be manipulated. Many diverse causal factors underlie the level of a group's full employment unemployment rate. For teenagers, the main reasons are: (1) the special voluntary factors mentioned above--weak labor force and job attachment; (2) the newness to the labor market (including unfamiliarity with how to go about finding a job); (3) barriers to downward wage cost flexibility, the most important being the minimum wage laws; (4) shifts in the location of jobs by industry and locale (e.g., urban vs. suburban); (5) lack of basic qualifications (reading and writing skills); and (6) discrimination. (Most of our findings on these factors will be discussed in the section on racial differences, p. 13.)

Public jobs programs

One Federal program that appears to be aimed at reducing the full employment unemployment rate of teenagers is subsidized public jobs. However, we conclude that there may have been problems in executing this approach. When teenage unemployment is at its full employment level, most unemployment is associated with short-term job turnover. No overall lack of job vacancies relative to the number unemployed exist. Still, some teenagers will have serious difficulty finding and holding jobs even in a tight labor market (e.g., because they lack basic reading and writing skills). And, if the public job programs that benefit teenagers, which have mushroomed since the late 1960s, were targeted on this subgroup of unemployed teenagers, then the objective of reducing the full employment unemployment rate for teenagers could be achieved. However, if the programs are not so targeted and instead are filled primarily with "job ready" teenagers who are heading quite rapidly for a private sector job, then these public jobs will only tend to reduce employment in the private sector and have very little effect on the overall rate of unemployment. Tables 3 and 4 show some data suggesting that this effect may have actually occurred.

Table 3 shows data on trends in the pattern of teenage employment changes over the summer months. In the early 1960s, no large-scale summer Federal jobs programs existed for teenagers. By the late 1970s, a number of Federal summer jobs programs were providing about 1 million summer jobs across the country. But the comparison of the increase in summer employment in the two periods (1960s vs. 1970s) indicates they are about the same. One might have expected the large growth in the summer jobs programs to have increased teenage employment in the summer months. Our analysis above provides one plausible hypothesis to explain this lack of growth--the jobs have gone mostly to teenagers who would have been employed quite quickly in the private sector in the absence of the Federal program. Of course, this single comparison does not prove the case. Perhaps the summer employment increase would have declined in the absence of the public jobs programs.

Table 3

Teenage Employment Changes During the Summer Months, Males 16-19: Selected Years 1960-78
(percentage)

Year	May to June a/ (E/AP_m) w.100	June to July a/ (E/AP_m) w.100
1960	22.5%	8.7%
61	22.7	8.1
62	20.2	10.2
1976	16.5	13.9
77	18.1	12.3
78	22.6	9.3

a/ E = change in employment; May to June and June to July.
AP_m = available pool--number of teens out of the labor force or unemployed in May of the year.

Source: Selected issues of Employment and Earnings, U.S. Department of Labor, Bureau of Labor Statistics.

The data in table 4 show that the volume of nonsummer public jobs for teenagers increased about tenfold between 1970 and 1980 1/. But did this increase lead to any reduction in long-term unemployment among teenagers? In 1973, which was close to a full employment year, 184,000 teenagers 16 to 19 years old were out of work for 15 weeks or more in the March survey week. In March 1979, another full employment year, 235,000 teenagers 16 to 19 years old were unemployed for 15 weeks or more--an increase of 27 percent. During this same period the labor force of teenagers 16 to 19 years old increased only 13 percent, so that the incidence of long term unemployment among teenagers actually increased significantly over the period that public jobs for teenagers were increasing dramatically.

Other factors could have increased teenage unemployment over the period, so that in the absence of the public jobs program, long term teenage unemployment might have increased by even more. One such factor was changes in the minimum wage law; in 1977, the coverage of the law was significantly extended. Economic theory would suggest that this would increase teenage unemployment, but by how much cannot be said with certainty. It is not likely that this effect could have been large enough to have accounted for

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1/One major reason for this increase is the economic stimulus package of President Carter.

Table 4

Estimates of Nonsummer Public Job Slots Filled By Teenagers

Fiscal Year	Program Outlays (millions)	Estimated Number of Job Slot Years a/
1970	$ 98	30,600
1971	95	29,700
1972	125	39,000
.b/	.	.
.	.	.
.	.	.
1975	465	110,000
1976	989	215,000
1977	827	180,000
1978	2,000	377,000
1979	2,219	382,000
1980	1,860	300,000

a/Outlays are converted to job slots by dividing total outlays by the prevailing Federal minimum wage times 2,000. The result is a "slot year," which generally understates the number of teenagers who actually participate since the average time spent participating is less than 1 year.

b/Data for these years were not available in the required detail.

Source: Data on program outlays for 1970-72 are from Special Analyses: Budget of the United States, chapter on Employment and Training Programs. Data for 1975-80 are from special tabulations provided by the budget office of the Employment and Training Administration, U.S. Department of Labor.

both the observed 50,000 increase in long-term unemployment and the approximately 300,000 increase in public job slots between 1970 and 1980. It would appear that some fraction of the 300,000 increase in non-summer public jobs was not targeted on long-term unemployed teenagers. [1] This fraction is hard to estimate without much more research. We feel that the magnitude of the fraction may be significant.

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[1] Some data from special surveys of teenagers also support this suspicion. The surveys show that the educational level reached by teenagers who occupy the public job slots does not differ significantly from the educational level of those who did not participate in Federal employment and training programs. (See Michael Borus et al., Pathways to the Future: A Longitudinal Study of Young Americans, Center for Human Resource Research, Ohio State University, 1979.) This, of course, may not be significant given that few teenagers are "left back." Clearly, test score data of some kind are required.

RACIAL DIFFERENCES

Unemployment has been the most persistent economic difference between blacks and whites, especially among teenagers. Indeed, in the aggregate U.S. data (see figure 2), the pattern of the long run trend seems to defy all reason--unemployment rates were similar until the early 1950s; by 1980, 18 percentage points separated the two rates (black males 16-19 vs. white males 16-19). This difference increased during a time of greater awareness of racial discrimination, when steps were supposedly being taken to reduce the difference.

Another nagging problem with this trend is the widespread belief that the difference between the two rates greatly understates the true difference. This belief is caused by the very large difference in labor force participation rates; many feel that this represents large numbers of discouraged black teenagers who would be willing to work at reasonable wages if they could only find jobs. This difference in labor force participation rates, like the unemployment rate difference, also emerged quite abruptly by the early 1960s. By 1979, the labor force difference among males (16-19) had grown to 20 percentage points--43.9 percent for blacks versus 64.8 percent for whites.

The potential implications for unemployment rate differences are very large--e.g., if black teenagers are assumed to exhibit the same labor force participation rate as white teenagers, by counting enough black teenagers who were outside the labor force as unemployed, then the unemployment rate for black males (16-19) in April 1979 would have risen from 32.5 percent to 56.7 percent. The rate for white male teenagers was 13.3 percent during the same month, so the true unemployment rate difference might be as large as 41 percentage points.

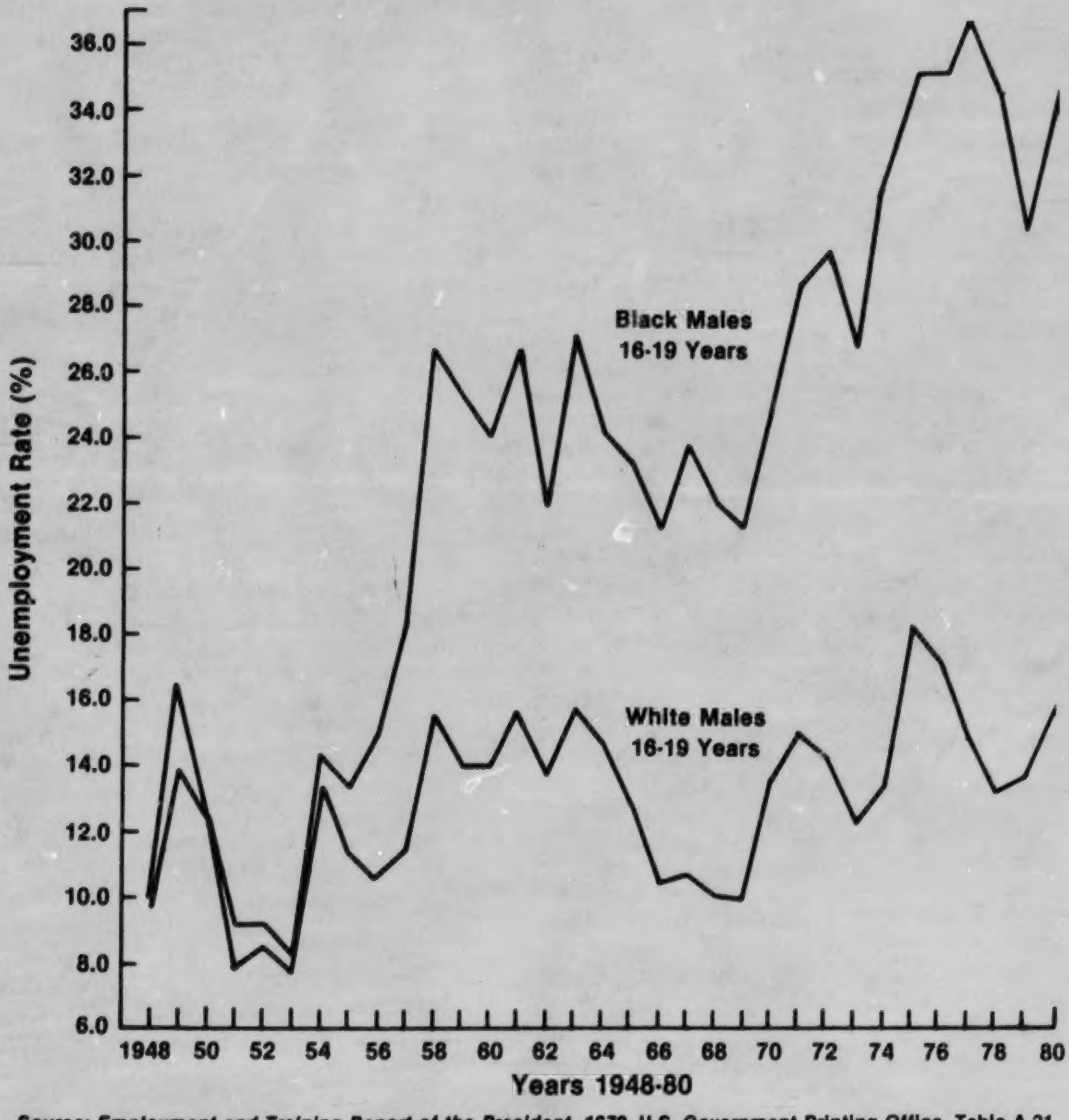
Is this possible? Could it be that 25 to 30 years ago black and white teenagers in the same labor market who wanted a job had about the same probability of finding one? And then, after decades of what appeared to be progress in many areas of civil and economic rights, the probability for a black teenager has fallen to only one-half that of a white teenager? We present analyses of some familiar data that, while they do not completely explain the trend or the level of the difference, do provide some clarification of this very puzzling situation.

Long-term trends in the unemployment rate difference

Up until 1954, black and white teenage males had about the same average unemployment rate. While the quite sudden appearance of a difference in the countrywide data has been widely interpreted as representing an abrupt and general deterioration in

Figure 2

Unemployment Differences, 1948-80



Source: *Employment and Training Report of the President, 1979*, U.S. Government Printing Office, Table A-21, and *Economic Report of the President, 1981*, Table B-31.

market conditions facing young black males, nothing could be more misleading. The reason is shown by the data in table 5, which gives teenage unemployment rates by color (white and nonwhite) and region for decennial census dates 1940 to 1970 and the CPS for March 1978. Note the dramatic variation in the difference by region, especially in 1940 and 1950. Nonwhite male teens actually had lower unemployment rates than white male teens in the South before 1950. This seeming anomaly occurred because most nonwhite teens in the South were in rural areas where measured unemployment was very low. 1/

From table 5 it is clear that from 1940 to 1970 the labor market conditions facing nonwhite teenagers outside the South did not worsen, as is suggested by the aggregate data for the U.S. as a whole--if anything, the data suggest improvement. The growth in the difference in the aggregate data was due to the shift of the nonwhite teenage population out of the rural South and the emergence of a significant racial difference within the South region. 2/

Since the 1968-70 period, however, there has been a definite widening of the difference that is pervasive--across all regions, types of places (e.g., center cities and suburbs), etc. If we use 1965 as a year in which the economy was operating at a full employment level of output, we can calculate the size of increase in the difference in unemployment between that year and 1979. The difference for males grew from 10.4 percentage points in 1965 to 17.9 percentage points in 1979.

A few observations need to be emphasized. One is that the large and pervasive difference is not a post-1954 phenomenon. It has been with us in the non-South since at least 1940. 3/ Also, in the South in 1940 and 1950, teenage unemployment differences between the races were smallest. Finally, the recent increase in the difference since 1970 comes after 30 years of a gradual decline in the difference outside the South. 4/

1/However, even within urban areas, the racial difference in unemployment has always been lower in the South than elsewhere.

2/The data in table 5 suggest a worsening of labor market conditions for nonwhites, for the 1940-1970 period, in the West region. However, the trend is not continous as it is in the other regions of the country, and the West was much less populated than other regions. The difference between the South and the rest of the country (of which the West is a smaller part) is what is important in the context of our discussion.

3/A single exception to this occurs in the West between 1940 and 1950.

4/See footnote 2.

Table 5

Unemployment Rates a/ By Color b/ and Region, Decennial Census Years and 1978, Males 16-19 Years Old

	1940		1950		1960		1970		March 1978	
	White	Nonwhite	White	Nonwhite	White	Nonwhite	White	Nonwhite	White	Nonwhite
Northeast	35.0%	52.7%	16.7%	34.0%	11.5%	22.6%	8.9%	18.9%	18.1%	51.2%
North Central	23.1	43.6	9.1	29.1	10.7	25.7	10.1	23.0	13.3	49.3
South	16.6	14.1	9.0	8.5	10.2	12.6	9.3	15.4	15.5	36.7
West	23.1	12.4	16.2	25.1	13.1	20.3	14.3	27.2	17.3	33.1

a/The number who were looking for work divided by the number employed plus the number who were looking for work.

b/For 1970, the data are for black vs. nonblack.

Source: 1940-70 are from the U.S. Bureau of the Census, Characteristics of the Population, of the various decennial censuses. 1978 is from a special tabulation from the March 1978 Current Population Survey using the public use file.

Participation rate differences --their significance

Most investigators of teenage unemployment view the lower black labor force participation as reflecting large numbers of black teenagers who want to work at the going wage and working conditions but who cannot find jobs even after spending a reasonable amount of time looking. These people are called "discouraged workers" because they want a job and have looked for one but have stopped looking (and are therefore counted as out of the labor force in the official statistics). 1/

Although discouragement is undoubtedly a factor underlying the participation difference, it is important to point out that other factors could also be at work. One is that black teenagers, because of their general lower level of education and measured level of scholastic achievement (see chapter 4, p. 58), cannot obtain as high paying or as "nice" a job as white teenagers, and this causes them to reduce their participation. Another factor is the higher percentage of black teenagers in AFDC (welfare) families and the work disincentives present in that program. Our multiple regression analysis attempts to shed some light on these two factors.

The existence of these two additional factors should lead policymakers to be concerned about the lower labor force participation by black teenagers. It clearly would be better for black teenagers to be able to command wages and working conditions as high as white teenagers and not be subjected to the work disincentives of the AFDC program. However, these causes may not be as socially divisive as discouragement, which arises if large numbers of black teenagers after extended searching cannot find jobs even though they are willing to accept low pay and less desirable working conditions. Thus, it is important to look for whatever evidence one can find on the discouragement factor. The CPS provides a source of evidence on this issue, collecting data from teenagers

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1/By a "discouraged worker," we mean someone who has spent a considerable time trying to find a job at the going market wage and unemployment conditions. The purpose of the concept is to get a better measure of the actual rate of unemployment. Many individuals who are outside the labor force and who never looked for work would, however, enter if their expected wage level rose significantly. This group, which contains a considerable number of women and teenagers, is not considered to be in the category of "discouraged workers," for the purpose of unemployment analysis.

outside the labor force on their job desires and reasons for being out of the labor force (see tables 6 and 7). 1/

Table 6

Teenagers with No Work Experience in 1977, By Main Reason for Not Working (16 to 19 Years Old, Both Sexes, And Major Activity in March 1978) (percentage distribution)

Main Reason	School		Other	
	Black	Nonblack	Black	Nonblack
Could not find work	4.2	2.0	14.3	9.0
Ill or disabled	0.5	0.5	2.7	3.8
Taking care of home	0.3	0.4	29.0	29.3
Going to school	94.2	96.0	46.6	48.4
In armed forces	0	0.1	0.6	0.7
Other	0.6	1.0	6.7	8.8

Source: Special tabulations from the CPS public use tape of the March 1978 survey.

1/Actually, in the CPS the mother usually responds. The latest longitudinal survey from the Ohio State Center for Human Resource Research (which queries the teenager directly) indicates that both white and black teenagers report considerably more employment and unemployment than is recorded for them in the CPS. The participation rates of blacks and whites are very close in these data and the unemployment rate differential is about 6 percentage points higher. These results suggest that in reality there may be very little racial difference in participation. They also suggest that only about one-third of the CPS measured difference in participation is actually additional unemployment differential. However, this set of data may have its own problems. Teenagers, under intensive questioning, may report very trivial or even nonexistent job-seeking and employment experiences (i.e., the "Hawthorne Effect"). See Michael E. Borus et al., Pathways to the Future: A Longitudinal Study of Young Americans (Preliminary Report: Youth and the Labor Market--1979, Center for Human Resource Research, The Ohio State University.

Table 7

Job Desires of Persons Not in the Labor Force and Reasons for Not Seeking Work (Both Sexes 16 to 24 Years Old; Fourth Quarter Average, 1979-80)

Job Desires and Reasons	White 1979	White 1980	Black and Other 1979	Black and Other 1980
Total not in the labor force (000s omitted)	8,931	9,079	2,355	2,455
Do not want a job now	7,334	7,368	1,709	1,794
(percentage of total)	82.1%	81.1%	72.6%	73.1%
Want a job now	1,596	1,712	647	660
(percentage of total)	17.9%	18.9%	27.4%	26.9%
Reason for not looking (percentage distribution)				
School attendance	57.6%	55.2%	51.6%	50.4%
Ill health, disability	3.3%	3.6%	5.1%	3.3%
Home responsibilities	13.9%	14.9%	16.8%	14.4%
Think could not get a job	8.5%	10.8%	13.4%	20.1%
Other reasons	17.0%	15.5%	13.0%	11.7%

Source: *Employment and Earnings*, Department of Labor, Bureau of Labor Statistics, Table 40, January 1980.

For individuals who did not have any work experience during the previous year the question was asked: "What was the main reason __________ did not work in 19__?" The respondent is given the choices listed in table 6. Among teenagers, whose major activity was attending school on the survey date, only very small percentages said that inability to find work was their main reason for having no work experience the previous year. This was true for blacks and nonblacks with a slightly greater percentage for blacks. Among nonstudents, as we would expect, the percentages responding "inability to find work" were significantly higher, again with blacks having higher percentages than nonblacks.

Individuals who are not in the labor force at the time of the survey interview are asked about their job desires and reasons for not seeking work. Although the data in table 7 are not limited to teenagers (they include the 16 to 19 age group), they should still be indicative of racial differences among teenagers. The data show that the great majority of young people who are outside the labor force do not describe themselves as discouraged workers.

However, these differences in the percentage who report themselves as discouraged workers can explain only a small fraction of the large differences in the incidence of nonparticipation. If all the black teenagers who responded that "inability to find a job" was the main reason for no work experience in 1977 are subtracted out of the "no work experience group" and placed in the "some work experience group," their rate of no work experience would fall from 54.7 percent to 50.9 percent. The corresponding fall for white males would be from 27.0 percent to 26.0 percent--almost the entire gap in participation rates would remain.

It can be argued that the survey data on reasons and job desires is an imperfect gauge of how much a teenager actually looked for and/or desired a job during the year. This is especially so for teenagers who lack the prerequisite personal qualifications. After a few discouraging experiences with employment, they may just respond to the CPS that they are not interested in a job. As we show in chapter 4, there are large racial differences in indicators of job qualifications (e.g., standardized test scores) so that this source of discouragement (not being able to qualify for a job) may be a significant cause of the racial difference. What our empirical data seem to support is the conclusion that racial differences in labor force participation are *not* accounted for by racial differences in otherwise qualified but discouraged workers. They may be accounted for by differences in qualifications.

Multiple regression analysis

To explore some of the other possible determinants of racial differences in participation and unemployment, we hypothesized a linear relation between the variables and fitted multiple regression equations to data on individual teenagers (March 1977 CPS tape). We analyzed both unemployment and labor force participation. The details of our analysis are in chapter 4; here we report the main findings for the racial differences.

Controlling for the effects of family income, residence in a welfare household, years of schooling completed, and region of residence explains about 70 percent of the racial difference in labor force participation rates among out-of-school teenagers. Among young out-of-school teenagers (those 16 to 17 years old) these same variables explain practically the entire unemployment rate difference. Among the older people out of school, the variables can explain only about 20 percent of the difference in the incidence of long term unemployment over the year. For the out-of-school teenagers, the welfare household variable measures the work disincentive effects of the AFDC program 1/ as well as the lack of access to informal channels of job information and low scholastic achievement.

Among in-school teenagers, these same variables were able to explain much less of the racial differences--about 35 percent of the labor force participation difference and only 16 percent of the unemployment rate difference. However, a major variable that we were not able to control for in our equations was academic achievement in basic reading, writing, and arithmetic skills. The CPS data file contained only the number of years of schooling attained. We did not have a good indicator of how much was actually achieved by this attainment. There is much data showing that with the same number of school years completed white teenagers score significantly higher than black teenagers on achievement tests (see chapter 4, pp. 56 to 61), and other studies have shown that these scores are significantly correlated with measures of earnings and job success among young adults. These achievement tests result are, in turn, very strongly influenced by the quality of schooling, family income, and other background characteristics.

Our regression results also help explain the trends in both unemployment and labor force participation differences. During the period 1961-73, the percentage of black teenagers who were recipient children in AFDC households increased significantly relative to white teenagers (table 8). Our regression analysis

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1/Under AFDC program rules, a teenager who is 14 or over but still a member of the unit for benefit determination may have some of his earnings offset against family benefits if he is not enrolled in school. If he is a full-time student, all of his earnings are disregarded for benefit determination purposes. However, States may, if they choose, disregard "reasonable amounts" of earnings of nonstudents for the future use of the children. Some States now do this; others do not. Also, if the nonstudent teenager is working in a public service job slot, he is treated like a student for AFDC benefit determination purposes.

Table 8

Teenagers Who are Recipient Children a/ Under the AFDC Program by Race: 1961-77 (percentage of all teenagers)

Year	Black	White
1961	6.0%	0.9%
1967	9.0	1.5
1969	11.6	1.7
1971	15.3	2.4
1973	16.0	2.4
1975	15.8	2.7
1977	14.2	2.8

a/Teenagers can be receiving AFDC benefits without being recipient children--they can be young mothers who qualify because they are unable to support their children. Therefore, among teenage females, trends in child recipient rates will tend to fall if teenage illegitimacy and divorce rates rise.

Source: Findings of the 19 AFDC Survey, Part 1, Demographic and Program Characteristics. Recipient children by age and race were estimated assuming that blacks and whites had the same age distribution. Copies of the various surveys can be obtained from the Office of Research and Statistics, Social Security Administration.

predicts that a decrease in labor force participation relative to whites would take place, although not of the magnitude observed. Similarly, our analysis indicates that some of the large jump in the unemployment rate difference that took place between the late 1960s and the present may have been due to the sharp acceleration in the growth of the percentage of black teenagers in AFDC households between 1967 and 1973. Again, however, the magnitude of the increase is much greater than would have been predicted by our equations.

The minimum wage may have played some role in the increase. Before the sharp recession of 1973-75, black teenagers had lost some ground to white teenagers, as compared to 1965 (the last normal or full-employment year as opposed to the overfull years of 1968-69), but not too much. The recession hit both black and white teenagers hard but blacks did not seem to recover fully during the ensuing recovery while white teenagers did. In January 1977, the coverage of the minimum wage was greatly extended, meaning that a significant number of low wage jobs were made subject to the law just as the recovery was gaining momentum. This could have been the factor that stopped black teenagers from participating fully in the recovery.

Summary

We have attempted to clarify two very puzzling and troubling aspects of the racial differences in teenage unemployment--the apparent absence of any unemployment difference before 1954 and the potentially large "true" unemployment difference that might exist if discouragement were the major factor underlying the large racial difference in participation.

Although the participation difference is far from being fully understood, we think that a simple discouragement hypothesis, that otherwise qualified teenagers cannot find a job, is not a significant factor. Discouragement, because of chronic inability to hold a job, may be a factor, but its relative importance (e.g., vis-a-vis incentives to work) is clearly in doubt.

We think there are two major unresolved issues--why did the black teenage unemployment rate rise so sharply since the 1965-70 period?; and what factors underlie the large and persistent (40+ years in the non-South) teenage unemployment difference? Our judgment (based partly on our survey findings) is that lower scholastic achievement, which, in turn, is a function of many family background variables, and lack of access to the crucial informal channels of job vacancy information will be major factors in resolving these issues.

SOCIAL COSTS

Much of the concern over teenage unemployment stems not so much from its effect on the current income of teenagers, but from its potential effect on their propensity to commit crime and from its possible effect on their future (post-teen) prospects in the labor market.

We have surveyed the available evidence on these two issues. On the effects on future labor market success, the data show that for most unemployment periods there is no effect. For periods of unemployment incurred while enrolled in school there is no discernible effect on future employment and for periods incurred while not enrolled in school there is a small negative effect. However, this is true only for black teenagers who experience very long periods of unemployment. 1/

1/Strickly speaking, this conclusion applies only to male teenagers. Females were not studied in the more reliable study on which we base our conclusion for males. In one study (which is much less reliable because we could not check the methodology used) there was an apparent significant negative correlation observed for women (not for men). The interpretation of the data is complicated in that among women propensities for serious labor force attachment as an adult vary sharply, which is not

The data set that underlies these conclusions is well designed for the purpose. The data are longitudinal so that the same individuals are observed over a number of years. This makes it possible to observe directly whether individuals who experience unemployment during their teens are the ones who have future labor market difficulties.

Unfortunately, we cannot speak with as much certainty about the possible teenage crime-teenage unemployment link. A number of economists have studied this relationship and have generally concluded that there is such a connection. However, our analysis of the data and methodologies underlying these studies leads us to reject the conclusion that there is evidence of a significant causal relation. We feel that a more balanced conclusion is that there is as much evidence for the linkage as there is for a number of alternative hypotheses that are consistent with the same empirical data.

The economists used two types of data frameworks--cross-sectional and time series. In neither of these data frameworks has anyone yet worked with data on the same individuals before and after some became unemployed (as has been done with the teenage unemployment/future employability hypothesis). This is the fundamental flaw in the evidence on the unemployment crime link. The data units have all been averages for all teenagers in an area (for the cross-sectional studies) or for one area over time (the time series studies).

The cross-sectional studies usually (but not always) find that areas (cities, census tracts within a city, States) with high teenage unemployment rates have high teenage crime rates. However, in none of the studies we examined were the studies able to specify and measure other factors that affect the crime rate and that could vary across areas. This is particularly important in the case of crime because many studies by sociologists based on individual teenagers show that factors like parental relations, personality type, peer group pressures, and the like, are important causes of crime. Moreover, these same factors can also cause unemployment rates to be high as well. That is, the same personality problems that lead a teenager to commit crime may also make it difficult for him or her to hold down a job. Also, whether or not a teenager has a job may be largely irrelevant to whether or not he or she commits the crime. Thus, the possibility of spurious correlation is high.

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the case among male teenagers. If these tendencies are associated with more attachment while a teenager, then one would observe a correlation between unemployment as a teenager and future labor market performance, but it would only reflect these varying propensities, not the effect of the early unemployment. Of course, one could argue that the tendencies themselves might be influenced by early unemployment experiences. Clearly more empirical studies are required.

Another possible interpretation is that family income and the unemployment status of the parent(s) influence teenage crime. We would still observe a correlation with the teenage unemployment rate because it would tend to be correlated with the adult rate across areas.

Figures 3 and 4 show the evidence revealed in the time series studies. The crime rate and the unemployment rate trends are in the same direction. These trends account for most of the correlation in the time series data. When the common trend is netted out, the correlation between deviations from trends in the two series is much weaker. As with the cross sectional results, the common trend correlation could easily be attributable to a third factor influencing both crime and unemployment. Another possibility when using time series is that each series is being influenced by a variable specific to itself--e.g., increasing coverage of the minimum wage underlies the uptrend in the unemployment race and decreased enforcement by metropolitan police forces underlies the uptrend in the crime rates.

Perhaps the most disturbing thing about the aggregate time series data is the inconsistency in the correlation across races. For white people, for whom the crime rate rose even more, unemployment hardly increased at all between 1965 and 1979. For black people there was a substantial increase. (To isolate trends in unemployment, one must go back a few years prior to 1967, the year most economists feel was at the beginning of a period of over-full employment.)

Perhaps the most potentially convincing evidence that increased unemployment may cause an increase in crime is that the arrest rate for both races appears to respond to the sudden sharp increases in unemployment associated with fairly deep recessions. We know that these are associated with higher layoff rates among teenagers and set the stage for a plausible causal relation running from increased involuntary unemployment to crime. Unfortunately, even this aspect of the empirical record is difficult to accept without reservation. Note (figure 4) that among young blacks this cyclical association has not been so close. In addition, there is a competing hypothesis just as compelling to explain the observed data--that is, it is family income, not the unemployment of the teenager per se, that is relevant to crime decisions. As with the cross-sectional data situation, the unemployment rate of the mother and/or father would rise at the same time the rate for teenagers rose and build in the observed cyclical relationship. Again, without microlongitudinal data on the same group of individuals, it will probably not be possible to resolve the question.

Figure 3

Arrests Per 1,000 and Unemployment Rate for White Males, 16-17 years Old

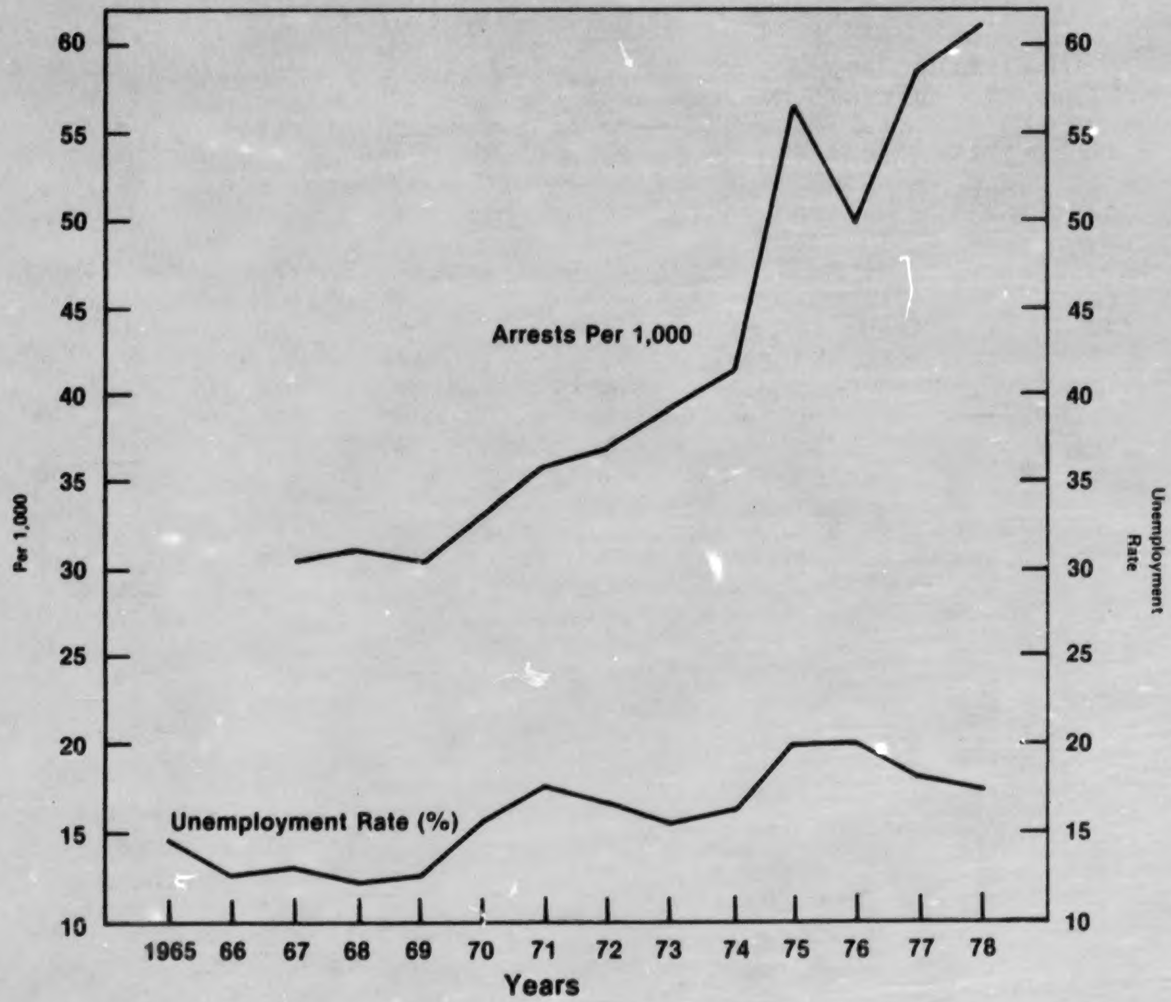

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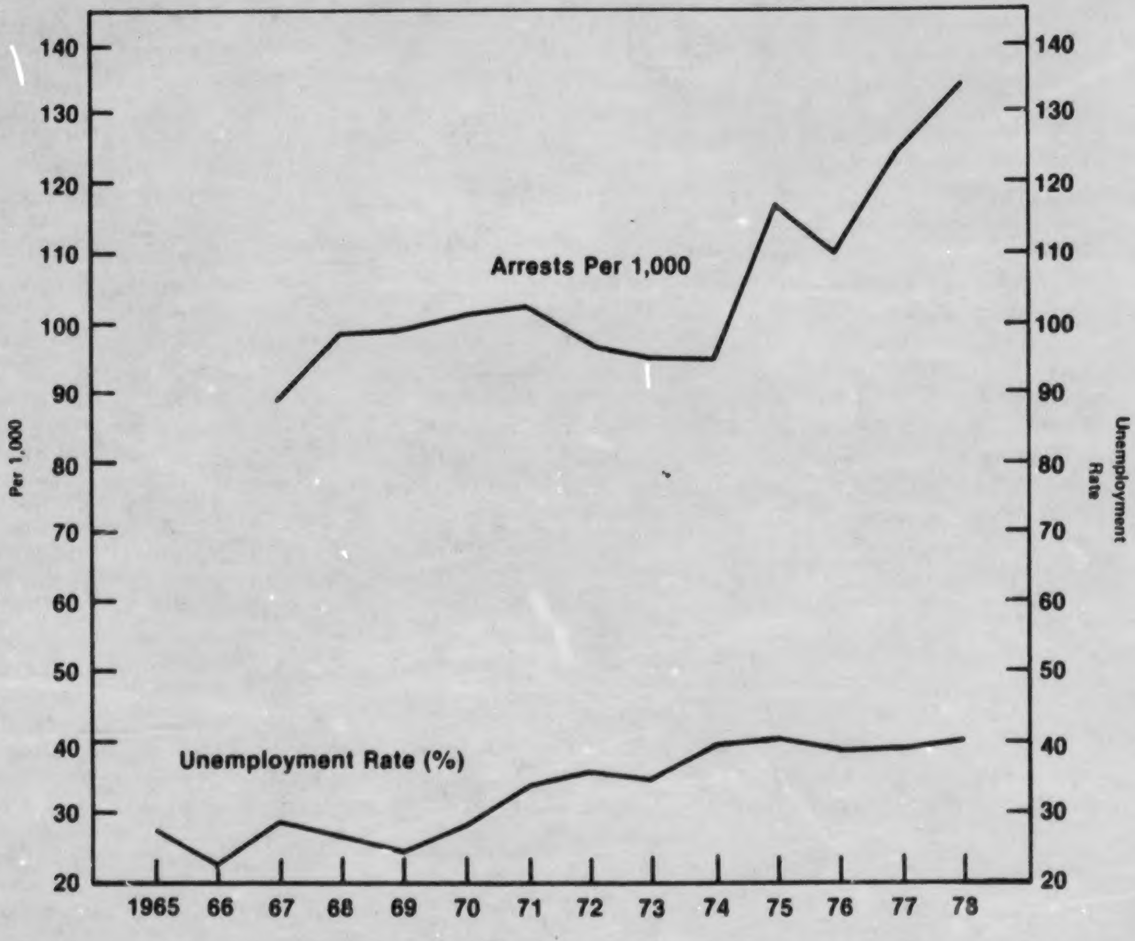
Figure 4

Arrests Per 1,000 and Unemployment Rate for Black Males, 16-17 Years Old



CHAPTER 3

NEED ANALYSIS

Although finding a job is not a serious problem for most job-qualified youths 1/, qualifying for a job while a youth and making a successful transition from school to work to career definitely is, and it is likely that many youths do need Government assistance to make this transition. However, we feel that previous attempts to accurately identify these youths using primarily employment and labor force status data are inaccurate and misleading. For example, we reviewed five studies made by the Department of Labor and other researchers 2/ and found that the need estimates varied widely, from 379,000 to 3.7 million youths (see appendix I). All but one of the studies assumed that employment and labor force status alone can be relied upon to accurately identify the number of youths in need. We feel that this assumption is not very useful and develop an alternative approach using educational achievement, as well as labor force and demographic data.

The set of characteristics that would be needed to accurately identify all youths who were going to have problems making a successful transition from school to work to career is surely longer than scholastic achievement and employment status. However, as we will show, there is a substantial amount of empirical evidence showing that an adult's and young adult's job success is significantly affected by the scholastic achievement level. Thus, we feel that our need estimates will be a significant improvement over those that just used the employment status characteristics. Still, it is important to keep in mind that other potentially important characteristics are not being used--e.g., the amount and quality of a job and the career information available from parents and friends. We first present estimates based on employment criteria alone and then those based on both scholastic achievement and employment criteria that, in our judgment, best represents the youths most in need. For each approach, we present overall estimates and then break them down by school enrollment and family income status. The reason for presenting the wide range of estimates is so that the reader can judge which criterion is more appropriate.

1/In this chapter, "youths" (people 16-21 years old) has been substituted for "teenagers." Where the age group changes, it will be noted in text.

2/David Swinton, Urban Institute; Robert Lerman, Department of Labor; Robert Taggart, Department of Labor; Feldstein and Ellwood, National Bureau of Economic Research; and the National Commission for Employment Policy (see appendix I).

"NOT WORKING" CRITERION

Employment status is the most obvious and commonly used criterion for identifying youths with labor market needs. Using an overall measure of joblessness (either unemployed or out of the labor force) results in the largest need estimate--over 10.5 million youths of all income levels. This estimate can, however, be greatly reduced by limiting the coverage to certain subgroups. Table 9 shows the range of estimates based upon poverty and school status. Within this group are subgroups of youths whose characteristics indicate far greater need for employment and training services. For example, we could present an intermediate range of need estimates that only includes poverty level youths who are not employed (639,000 - 2,072,000). Within this group the severity of need probably varies significantly. The 639,000 figure includes only high school dropouts who would likely face the most difficult obstacles to employment.

This simplistic use of labor force data as the major indicator of need has several problems. First, estimates including all unemployed youths are inadequate because they overlook the length of unemployment. As a result, temporarily unemployed youths who are experiencing little hardship are included. Second, counting all youths outside the labor force overstates the size of the problem by including those who really do not want a job or whose family or other responsibilities prohibit their working. This problem can be minimized by providing estimates that exclude in-school youths or by specifying that they should receive different employment services from those who are out of school (i.e., part-time work experience versus a full-time job.) Third, these estimates ignore those employed youths who may have considerable long-term labor market problems. In particular, those out-of-school youths whose employment does not raise their total family income above the poverty level are probably lacking the education or skills needed for a better paying job. Analyzing the needs of this group would require more detailed data on their education and work experience.

In conclusion, this popular approach of equating youth unemployment problems with overall jobless rates (whether looking for work or not) is oversimplified. Youths who are jobless for short periods are included in need estimates while employed youths with serious labor market deficiencies are excluded. Further, those estimates that ignore school status are misleading because of the peculiar situation of youths who are in a school to work transition. An analysis of the unemployment problem thus requires a more detailed breakdown of the labor force data, as well as education and other characteristics of youths.

DETAILED WORK EXPERIENCE CRITERION

Our second set of need estimates is based upon the work experience of youths during 1977. In particular, we examined the

Table 9

Labor Force Status by Poverty Level and School Status, March 1978 (in thousands) a/

School Status	Below Poverty			Poverty or Above		
	Employed	Unemployed	Not in Labor Force	Employed	Unemployed	Not in Labor Force
Major Activity:						
In School	197	144	997	2,831	715	5,229
Major Activity:						
Other						
High school graduate	305	109	183	4,227	554	716
High school dropout	324	180	459	2,044	441	799
Subtotal	629	289	642	6,271	995	1,515
TOTAL	826	433	1,639	9,102	1,710	6,744

a/Population only includes youths with a high school degree or lower educational attainment.

Source: GAO tabulations of the Current Population Survey, March 1978.

length of unemployment among youths who worked in 1977 and the reasons for nonemployment among those who did not work at all during that year. Table 10 provides this overall information broken down by income and school status.

As indicated in table 11, the overall estimate of youths in need, based upon detailed work experience, can range from 318,000 to 4.4 million depending on the length of unemployment and the income criteria used to define need. These estimates include workers who experienced some unemployment in 1977 and nonworkers who said they were unable to find work during that year. Again, limiting the analysis to poverty youths greatly reduces our estimate to a maximum of 655,000. Within this poverty population, however, need varies with the level of schooling and length of unemployment.

One possible approach to assessing the severity of need among these youths is to focus on high school dropouts who were either workers unemployed for 20 or more weeks or nonworkers who desired work but were unable to find it. These 157,000 youths represent a group that probably faces dismal job prospects. Although all have expressed an interest in working, their long job search has been unproductive. They also lack the high school credentials that are important to many prospective employers. Using this same approach of focusing on high school dropouts, alternate estimates of need would include those workers who were unemployed 1-19 weeks plus the nonworker subgroup (195,000), or all youths who looked for work in 1977 (287,000).

Another method is to include all out-of-school youths in the various estimates of need. The assumption here is that economically disadvantaged high school graduates who want to work but have not found jobs are probably lacking crucial knowledge about the labor market and should be included in the estimates. Using this criterion for need, the range is from 255,000 to 514,000 depending on the length of unemployment for the subgroup.

Finally, the largest estimates of need that comprise all disadvantaged youths who want jobs vary from 318,000 to 655,000. These estimates include in-school youths who could certainly profit from a part-time job experience but whose need is less critical than those out of school. Again the variations in size depend on the length of unemployment.

Examining the detailed work experience data in this way offers several advantages over the approach of simply including all jobless youths at a particular moment in time. The length of unemployment information helps target those youths who experienced long-term unemployment during the year, thus eliminating youths whose unemployment was temporary. Also, including only those nonworkers who report that inability to find work was the main reason for their joblessness avoids overestimating the number in need by not including those who do not want jobs or have other responsibilities that prevent their working.

Table 10

Work Experience of Youths Who Worked in 1977 and Main Reason for Not Working (in thousands) a/

	Disadvantaged				Advantaged			
Work and Unemployment Experience and Main Reason for Not Working	In School	H.S. Graduate	H.S. Dropout	Total	In School	H.S. Graduate	H.S. Dropout	Total
Youths Who Worked								
No unemployment b/	362	210	246	818	4,112	3,455	1,619	9,186
1-19 weeks unemployment	78	129	130	337	861	1,094	649	2,604
20+ weeks unemployment	37	62	92	191	207	416	269	892
Total workers	477	401	468	1,346	5,180	4,965	2,537	12,682
Youths Who Did Not Work								
Unable to find work	26	36	65	127	85	63	77	225
Other reasons	833	160	431	1,424	3,509	467	668	4,644
Total nonworkers	859	196	496	1,551	3,594	530	745	4,869
TOTAL	1,336	597	964	2,897	8,774	5,495	3,282	17,551

a/Population includes youths with a high school degree or lower educational attainment.

b/Includes both year-round workers (50-52 weeks) and part-year workers who spent all of their nonworking time out of the labor force.

Source: GAO tabulations of the Current Population Survey, March 1978.

Table 11

Need Estimates: Detailed Work Experience Criteria a/ (in thousands)

	Estimate	
Need Indicator	Disadvantaged	Advantaged
Workers with any unemployment in 1977 plus nonworkers who were unable to find work		
In school	141	1,153
Out of school	514	2,568
High school graduate	(227)	(1,573)
High school dropout	(287)	(995)
Total	655	3,721
Workers who were unemployed 1-19 weeks in 1977 plus nonworkers who were unable to find work		
In school	104	946
Out of school	360	1,883
High school graduate	(165)	(1,157)
High school dropout	(195)	(726)
Total	464	2,829
Workers who were unemployed 20+ weeks in 1977 plus nonworkers who were unable to find work		
In school	63	292
Out of school	255	825
High school graduate	(98)	(479)
High school dropout	(157)	(346)
Total	318	1,117

a/Population only includes youths with a high school degree or lower attainment.

Source: GAO tabulations of the Current Population Survey, March 1978.

However, even this detailed work experience data does not completely estimate the number in need. In particular, it neglects those impoverished, employed youths who need to enhance their employability skills. In addition, it overlooks the portion of those out of the labor force who do not want jobs but most likely have severe educational, training, child-care, and other job-related needs. These limitations with the usual method of defining need for employment services have led us to take a more comprehensive approach.

EDUCATIONAL AND LABOR FORCE CRITERIA

Although literature on youth unemployment frequently cites educational proficiency as important for obtaining labor market success, no existing estimates of need are directly tied to data on the educational deficiencies of youths. Also the empirical basis for asserting that scholastic achievement is an important determinant of labor market success is usually not discussed or presented. Fortunately, this is fairly easy to document. Starting in the mid 1960s 1/ a fairly substantial body of empirical evidence on this relationship has accumulated. 2/

1/The seminal work in this field is Gary Becker, Human Capital, 2nd ed. (New York: Columbia University Press, 1964.)

2/The following are some of the major studies, and references in these studies will yield further references:

Mark Blaug, "The Correlation Between Education and Earnings: What Does It Signify," Higher Education, February 1972 (1), pp. 53-76.

Blaug, "Human Capital Theory: A Slightly Jaundiced Survey," The Journal of Economic Literature," September 1976, No. 3, pp. 827-855.

John Conlisk, "A Bit of Evidence on the Income-Education-Ability Interrelation," Journal of Human Resources, Summer 1971 6(3), pp. 358-62.

Griliches, Zvi and William Mason, "Education Income and Ability," in Investment in Education: The Equity-Efficiency Quandary, ed. T.W. Schultz, Chicago, University of Chicago Press, 1972, pp. 74-103.

John C. Hause, "Earnings Profile: Ability and Schooling," in Investment in Education.

Dave O'Neill, "Voucher Funding of Training Programs: Evidence from The GI Bill," Journal of Human Resources, 1977 Fall, vol. 12, no. 4, pp. 425-445.

The empirical evidence tends to confirm common sense. Holding all things constant, individuals with higher scholastic achievement tend to end up with higher earnings. The main way this effect has been isolated is by comparing the earnings of individuals with different amounts of schooling and academic achievement and using a statistical methodology called "multiple regression analysis" (see chapter 2) to control for other factors that cause individual earnings to differ--e.g., age, years of labor force experience, marital status, region of the country, etc.

The major weakness in this empirical evidence is that it does not tell us much about the relative importance of the various determinants of differences in scholastic achievement among individuals--i.e., quality of instruction, motivation of the student, family background factors, and genetic endowment. The evidence is fairly strong, however, that non-genetic endowment factors are important determinants even if a precise weight cannot be given. 1/ In our need analysis we are essentially assuming that a significant fraction of the documented differentials in achievement can in fact be influenced by environmental factors.

Need estimates

In this final set of estimates, we present three approaches to assessing need that rely upon education data sources. The first group of estimates is based on the school enrollment and attainment data available in the CPS. We have also estimated the number of youths with educational deficiencies by applying various illiteracy rates to the CPS estimates of all youths. Finally, we present our most comprehensive need estimates that we think use the best indicators available of the education and employment needs in the current youth population.

Our first education approach is based on two measures of educational deficiencies: (1) high school dropout status and (2) below normal educational attainment (defined as 2 or more years below the model attainment level for a given age). Table 12 shows the range of possible estimates based upon these criteria for need. The largest need group would contain all youths who have dropped out of school or are enrolled in a grade that is 2 or more years below normal, regardless of family income. These 5.5 million youths will probably encounter tremendous difficulties in the labor market regardless of their current employment status or work experience. Within this group, those who have already dropped out of school (4.2 million) are probably in greatest need since the in-school youths with educational deficiencies presently have some access to remedial services. Again,

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1/See Griliches and Mason (1972), for an analysis that separates out the pure effect of environmentally induced changes in scholastic achievement on earnings.

Table 12

Educational Attainment of Youths by Economic Status a/ (in thousands)

School Status	Disadvantaged	Advantaged	Total
Major Activity: In School			
Normal attainment	1,005	7,880	8,885
Below normal attainment	333	895	1,228
Subtotal	1,338	8,775	10,113
Major Activity: Other			
High school graduate	597	5,497	6,094
High school dropout	963	3,284	4,247
Subtotal	1,560	8,781	10,341
TOTAL	2,898	17,556	20,454

a/Population includes youths with a high school degree or lower attainment.

Source: GAO tabulations of the Current Population Survey, March 1978.

confining the number in need to the economically disadvantaged reduces the estimates to 1.3 million (dropouts plus below normal attainers). Thus, over 44 percent of the disadvantaged youth population have educational characteristics that indicate serious labor market problems.

While dropping out of high school or being "left back" can indicate educational problems, it does not provide direct information about the achievement levels of those youths. Of particular importance to employers are basic skills such as reading, writing, and computation. Our second approximation of need counters this data inadequacy by estimating the number of youths who are deficient in these skills. Using the results from the nationwide tests of functional literacy reviewed in chapter 4, we have identified a range of need estimates based solely upon educational achievement. To do this, we applied illiteracy (or incompetency) rates from the national tests to the CPS estimates of all youths. As shown in table 13, these estimates of functional illiterates who would have the most severe labor market problems range from 982,000 to 3.9 million. The differences in the estimates are likely due to variations in the difficulty of the test and the stringency of the literacy cutoff (see chapter 4). Moreover, these illiteracy rates are much higher for disadvantaged youths. Table 13 also provides estimates based upon the different illiteracy rates for poverty level youths versus all other

Table 13

Estimates of Functionally Illiterate or Functionally Incompetent Youths (by economic status)

Test Source	Disadvantaged a/		Advantaged b/		Total c/	
	Rate	Estimate	Rate	Estimate	Rate	Estimate
Adult performance level project	32.0%	927,000	16.0%	2,809,000	19.0%	3,886,000
Mini-assessment of functional literacy	20.4%	591,000	11.1%	1,949,000	12.6%	2,577,000
Brief test of literacy	not available		not available		4.8%	982,000

a/Population base of estimate = 2,898,000 youths (see table 20).

b/Population base of estimate = 17,556,000 youths (see table 20).

c/Population base of estimate = 20,454,000 youths (see table 20).

Source: See text discussion, p. 59.

youths. Depending on the particular test results chosen to measure illiteracy, the estimates of disadvantaged youths in need range from 591,000 to 927,000.

These two approaches, which focus solely on the educational characteristics of youths, provide an insight into the long term labor market needs of teenagers that is lacking in the labor force data. Concentrating on youths who have performed substantially below their grade level, who have dropped out of school, or who cannot read or write sufficiently well to function in society should greatly increase the chances that those with the most severe labor market problems will be reached. This information can, however, be made more useful by combining it with the unemployment and labor force data traditionally used to assess need. The following is our "best" estimate of need based upon this joint analysis of the education and labor force characteristics of youths.

Our most comprehensive need estimate contains two classes of needy youths including (1) those who wanted to work but were unsuccessful in obtaining employment and (2) those who did not experience long periods of joblessness but had severe educational deficiencies. Using these criteria, we have constructed our optimum number of those in need, as shown in table 14. Overall, nearly 4.3 million youths are included, although the poverty portion of this group that is the focus of our attention contains 962,000 youths. About one-third of this group is composed of youths whose work experience indicates serious problems in obtaining jobs while the remainder have severe educational, but not necessarily employment, needs. The former group does, however, include many youths with both education and job needs (134,000) using the 42 percent illiteracy rate. 1/

This analysis improves upon earlier estimates of need by including youths who have not experienced serious unemployment but are nonetheless in trouble because they are illiterate. 2/ In particular, including illiterate employed, short-term unemployed, and out-of-the-labor force youths, acknowledges the long-term employability problems confronting these youths.

In conclusion, our best judgment about the number and characteristics of those in need of employment and training services is

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1/The 42 percent illiteracy rate was computed by adjusting the Adult Performance Level (APL) rate for nonemployed youths (25 percent) to account for economic status.

2/The illiteracy rate used to estimate need for these groups is 25 percent for disadvantaged and 13 percent for advantaged youths. These rates were computed by adjusting the APL rate for employed youths to account for economic status.

Table 14

Optimum Need Estimates for Employment and Training Services (in thousands)

Indicator of Need	Number in Need Disadvantaged	Advantaged
Workers who were unemployed 20+ weeks in 1977	191	892
Nonworkers who were unable to find work in 1977	127	225
Workers who were unemployed 1-19 weeks in 1977 and were illiterate a/	84	339
Full-year workers (50-52 weeks) who were illiterate	47	523
Part-year workers who spent none of the remaining weeks looking for work and who were illiterate	157	671
Nonworkers (excluding those unable to find work) who were illiterate	356	604
TOTAL	962	3,254

a/Illiteracy rates used to estimate need are 25 percent for disadvantaged and 13 percent for advantaged youths.

Source: GAO tabulations of the Current Population Survey, March 1978.

962,000 economically disadvantaged youths with a high school degree or lower attainment. 1/ This estimate includes many of

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1/These figures refer to labor force, population, and labor market conditions as of 1977. Although 1977 was a recovery year, it was still one of significant cyclical unemployment. Published data on the 1978 work experience of the teenage population suggest that our estimates of the two need groups based on inability to find work (318 million) would have been about 10 percent lower in 1978 and 1979, which were both years of little or no cyclical unemployment.

the jobless youths who are the focus of estimates made by DOL and other researchers. In addition, we have concentrated our attention on youths lacking the basic literacy skills required for getting and keeping a job. By examining labor force and education status jointly, we have, in our judgment, arrived at a number that best represents those youths faced with the most serious and long-term labor market barriers.

POLICY IMPLICATIONS

Our analysis of the youth unemployment problem has, thus far, focused on determining which groups within the youth population face the greatest obstacles to successfully competing in the labor market. We have identified a group that we believe would be an appropriate target for Government policy and programs. However, several issues in assessing and estimating the employment needs of youths should be addressed. These include (1) comparing our estimates to current participation in DOL employment and training programs, (2) determining which services should be provided to youths in need, and (3) clarifying some of the technical considerations in estimating the present and future size of the number in need.

Current youth participation in DOL employment and training programs

In order to estimate the employment and training needs of youths, we had to examine the current youth participation in Government programs. Estimates of enrollment in Federal employment programs vary from 2.4 to 2.6 million slots, as shown in tables 15 and 16. These tables, taken from Congressional Budget Office (CBO) and National Longitudinal Survey (NLS) reports, show the types of services provided to program participants.

According to the CBO, over three-fourths of the programs for youths provide work experience or subsidized employment (see table 15). Work experience projects provide short-term employment designed mainly to give participants some familiarity in holding a job while the subsidized public service jobs are entry level positions intended to serve as a transition to an unsubsidized permanent job. In contrast, only 21 percent of the participants receive training and education services such as classroom and on-the-job vocational training and remedial education.

These data on the activities of participants in programs for youths are generally consistent with results from the 1979 NLS youth survey. 1/ As shown in table 16, only 19 percent of the Government training programs offer basic education instruction

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1/Respondents were asked if they had received a list of possible services for each program reported.

Table 15

Key Federal Employment Programs for Youths, Estimated Enrollments and Expenditures by Activity, a/ FY 1979

Activity	Participants Under 22 years		Outlays for Participants b/	
	Number (in thousands)	Percent	Amount (in millions)	Percent
Work experience	1,483	61.4%	$1,682	40.5%
Job creation and subsidized employment	327	13.5	1,197	28.8
Training and education activities	505	20.9	1,029	24.8
Other activities	100 c/	4.1	247 d/	5.9
TOTAL	2,415	100.0%	$4,155	100.0%

a/Totals may not add to 100 because of rounding. Figures reflect the estimated percent of participants and outlays by activity across all employment programs. These figures were derived by CBO because Labor Department data do not indicate by activity the the percent of youth participants or the percent of funds serving youths. To obtain these figures, Labor and Interior Department data for the percent of total program enrollees and total expenditures by activity were multiplied by the percent of total program enrollees under age 22. These figures were then summed over all programs for which data by activity were available: The Work Incentive (WIN) program, the Youth Conservation Corps, and Comprehensive Employment and Training Act (CRTA) Titles II-A, B, C; II-D; IV; VI; and VIII. WIN program data represent actual costs and years of service for activities. Data were not available by activity for CETA Titles III and VII.

b/Assumes that the share of outlays for youths in a given activity equals the estimated percent of youth enrollees in that activity.

c/Youths receive transition services through a number of programs. Only the 99,600 youth in the Youth Employment and Training Program (YETP) receiving solely transition services are included here.

d/Includes $219 million for transition services in the YETP program and $28 million for miscellaneous services in all employment programs serving youths.

Source: Youth Employment and Education: Possible Federal Approaches, July 1980, p. 15.

Table 16

Distribution of Services Received in Government Training Programs a/

Type of Service	Percentage of Programs Including Each Type of Service b/
Job counseling	48.6
Basic education	19.0
English language	2.5
General Education Development	12.6
College preparatory	14.1
Classroom training	26.3
Subsidized job	89.7
Non-CETA job placement	6.8
Medical services	15.4
Child care	3.9
Transportation	16.0
Other	5.6

a/Consists of enrollments of civilians ages 14-21 on January 1, 1979 in Government-sponsored employment and training programs since January 1, 1978 (Population estimate = 2,640,000).

b/Percentages add to more than 100 since respondents could receive any combination of services within a single program.

Source: National Longitudinal Survey of Youths, Preliminary Report: Youth and the Labor Market - 1979, 1980, p. 103.

with 12.6 percent providing General Education Development training. Conversely, almost 90 percent of the programs provide subsidized employment. 1/

This information on the types of services the youths receive in employment and training programs suggests that recent Federal programs have emphasized meeting the immediate and short-term need for jobs. 2/ The results of our analysis suggest a very different emphasis. In our view, the characteristics of youths indicate that a far greater need exists for services designed to enhance their basic skills and employability.

Following is a discussion of the services required by youths within our optimum need estimates.

1/This figure includes all CETA subsidized job placements including work experience and public service employment.

2/Data on DOL program participants include ages 14 to 21 while our need estimates are for ages 16 to 21.

Services required to meet the needs of youths

Using the subgroup characteristics to assess the type of services required, we conclude that among the disadvantaged youths, 184,000 need jobs, 1/ 644,000 need their basic skills improved, and 134,000 need both jobs and remedial services. These estimates are drawn from our "optimum" need estimates and are shown in table 17. Since the economy was still recovering from the 1974-75 recession in 1977, 318,000 overstates the maximum number of youths in need of special job creation (either by itself or combined with remedial services) in 1979-80 by about 10 percent.

Providing a special public job to a youth who is having extreme difficulty finding one may not be the best approach. For the 134,000 youths who were both illiterate and having extreme difficulty finding a job, the provision of a public job while the individual is receiving remedial training makes sense, although special attempts at placement in private sector jobs might be possible in a number of cases. The 184,000 literate youths who were having problems finding jobs presents a more difficult problem. About 50 percent of these youths find jobs by March following the year during which they experience problems and surely some of these jobs will represent more or less satisfactory adjustment. Some in this group reflect problems, such as residence in a geographically depressed area or inability to finance skill training, that should be treated with the appropriate services rather than simply putting the individual into a public job. In conclusion, it is likely that the figure of 318,000 overstates the number of public job slots that could be usefully applied to the youths in need by about one-third. 2/

These estimates reveal a potentially large discrepancy between our judgment about who needs what services and DOL's actual delivery of services to program participants. DOL currently emphasizes the public jobs approach--delivering this service to the large majority of its recipients--while providing remedial education services to approximately 20 percent. 3/

1/Whether or not these are in addition to the youths who were in public jobs during 1977 depends on how the existing public jobs programs were targeted. As noted in chapter 2 there is circumstantial evidence that these jobs are mostly taken by job-ready youths to end a short period of unemployment. If this is the case, then 318,000 is the total number of public jobs needed.

2/If we take only half of the 184,000 literate long-term unemployed as needing a subsidized job then this would leave only 226,000 (134,000 + 92,000) who require a public job, which is approximately two-thirds of 318,000.

3/See tables 15 and 16.

Table 17

Services Required by Disadvantaged Youths in the Need Analysis, 1977

Population Estimates	Subgroup Characteristics	Services Needed
184,000 a/	Functionally literate youths who were either 1) workers with 20+ weeks of unemployment or 2) nonworkers who reported that they were unable to find work.	Jobs only b/
134,000	Functionally illiterate c/ youths who were either 1) workers with 20+ weeks of unemployment or 2) nonworkers who reported that they were unable to find work.	Jobs plus remedial services a/
644,000	Functionally illiterate d/ youths with the following work experience characteristics: --workers who were unemployed 1-19 weeks in 1977 --full-year workers (50-52 weeks) --part-year workers who spent none of the remaining weeks looking for work --nonworkers (excluding those unable to find work)	Remedial services only

a/This estimate represents the difference between the subgroup population (962,000) and the number who are illiterate, as derived in notes c/ and d/ below.

b/This does not imply that all these youths should be placed in public job slots. See text discussion.

c/Illiteracy rate of 42 percent was computed by adjusting the rate for nonemployed youths (25 percent) to account for economic status.

d/The illiteracy rate of 25 percent was computed by adjusting the rate for employed youths (15 percent) to account for economic status.

Source: GAO tabulations of the Current Population Survey, 1978.

Conversely, our need estimates indicate that 80 percent of the participants should get remedial services. Thus, although our estimates of the problem coincide with the number of youths in DOL programs, the types of services currently provided to participants will not, in our judgment, meet their needs. Developing the current and long range employability of youths by improving their basic skills will do far more to increase their chances for success in the labor market.

Technical considerations in estimating the number in need

The final issue with implications for policymakers concerns technical considerations in estimating the current and future number of youth who need employment services. One such issue relates to changes in the size of the population in need each year and the annual cost of meeting their needs. Although we included youths 16-21 years old in our initial need estimates, estimates for subsequent years should omit many of the older youths who will have been helped at ages 16 to 19. For example, if illiterate youths require only 3 years of remedial services, then after these 3 years the annual caseload of youths will be about half of our need estimates. Also, the cost of providing services to youths will vary widely with the severity of need among different subgroups and thus with the length and intensity of the services required to meet their needs.

Another technical issue concerns the limitations of the data used in our analysis of need. Although all of the data sources used to estimate need were based upon nationally representative samples of the population, the sample size and reliability of the data vary among the surveys. Moreover, the age groups included in the data differ among the various sources--the CPS includes people 16-21 years old, the Adult Performance Level Project data was confined to people 18-24 years old, and the Mini-Assessment of Functional Literacy was only given to 17-year-old students. However, we believe that these data, in spite of their limitations, provide a comprehensive and useful basis for estimating the approximate number and characteristics of youths with labor market problems.

CONCLUSIONS

Based upon our need analysis we conclude the following:

--Using labor force status as the major criterion for need overlooks the substantial number of youths who lack the basic reading, writing, and computation skills needed to compete and succeed in the labor market. Estimating the number in need thus requires a detailed, joint analysis of the educational achievement, work experience, and demographic characteristics of youths.

--Among disadvantaged teenagers, those who worked part year but experienced long periods of unemployment or those who did not work at all because they could not find a job should be the target of federally subsidized employment. However, a subsidized job should not be the sole treatment provided if the individual also has basic skills deficiencies.

--Youths who lack the level of scholastic achievement needed to function in the labor market should be included in the number in need regardless of their work experience or current labor force status.

CHAPTER 4

EVIDENCE ON CAUSAL FACTORS

Ideally, a good causal analysis of the determinants of unemployment and labor force participation needs a data set containing direct measures of all the important variables. The material available fell far short of this ideal. We could only measure factors in a very indirect way--using proxy variables that we conjectured were correlated with certain underlying variables of interest. We describe this analysis in detail in the first section of this chapter.

One of the major shortcomings of our statistical analysis is that we were not able to develop a good indicator of what may be a very important determinant of both employment status while a teenager as well as long run employability prospects in the post-teen years--scholastic achievement at a given level of years of schooling completed. So we brought together, in the second part of this chapter, data from various surveys that show measures of achievement in verbal and arithmetic skills and how these measures vary significantly by sociodemographic categories. We hope to stimulate research in this area and to alert policymakers to what we consider to be a very serious problem, one with implications far beyond teenage unemployment per se. Serious deficiencies in basic scholastic achievement can greatly limit the life chances of an individual.

STATISTICAL ANALYSIS

Regression analysis methodology

Economists use the statistical technique of multiple regression to measure the influence of changes in a number of separate variables on one variable in particular. For example, economists might measure the influence of income, population growth, and the price of foreign automobiles on the demand for domestic automobiles. Changes in the variable to be explained, often called the dependent variable (in the above example, this variable is the demand for domestic automobiles), are related to changes in the independent or explanatory variables: income, population, and the price of foreign automobiles.

Multiple regression techniques are used to estimate the parameters of an equation in which Y represents the dependent variable and each X represents the independent variables:

$$Y = a + b_1X_1 + b_2X_2 + \ldots + b_nX_n$$

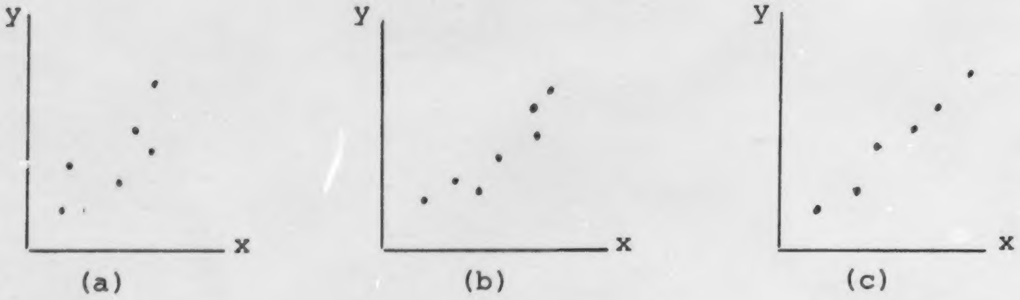
A constant term, a, is added to the equation to include other variables that might contribute to changes in Y but are not explicitly allowed for in the equation. The values of $b_1, b_2, b_3, \ldots, b_n$, determined statistically, measure the contribution respectively of X_1, X_2, X_3, ..., X_n to Y. For example, should the value of b_1 be .08 and X_1 be dollars of income, the equation tells us that, based on historic experience, for each change in income of one dollar, a change of 8 cents will occur in the spending on domestic automobiles, the value of all of the other variables held constant.

To interpret the results of multiple regression correctly, two aspects of the results should be noted. The first concerns whether the variables themselves (the X's) "explain" any part of the change in the dependent variable, Y. While the b's may turn out to have a positive or negative value, they may, nevertheless, explain no part of the movement in Y. The reason is that even though they have a positive or negative value it is not really different from a hypothetical value of zero. Thus, it is common to talk about the "statistical significance" of the value of the b's. If they have, as judged by standard statistical tests, statistical significance, then their values are different from zero and movements in the respective X's do explain movements in Y.

Second of concern is the percentage of the variation in Y that is accounted for by variations in all the selected independent variables taken together. This is commonly referred to as the "goodness of fit." A common measure of goodness of fit is the square of the correlation coeffficient, or R^2. The value of R^2 can vary between 0 and 1. The closer to 1 the better the fit, or more nearly do variations in the value of the X's explain variation in the value of Y. Should $R^2 = 1$ we have perfect correlation or the variations in the X's explain all the variation in Y. At the other extreme, should $R^2 = 0$ none of the variation in Y would be explained by variations in the X's. In figure 5, the plotted points in (c) most nearly can be fitted onto a line; the points in (a) are scattered too randomly to be fitted onto a line. Thus the "goodness of fit" is best illustrated by (c).

Figure 5

Goodness of Fit



(a) (b) (c)

65

Thus, statistical significance of the independent variables and the goodness of fit, or R^2, are two properties of multiple regression results of importance to anyone interpreting them.

Substantive analysis

To examine the teenage unemployment problem in depth, we performed some original analysis. Our approach was to relate measures of unemployment and labor force participation among teenagers with factors we believed to be important in explaining their variation. We hypothesized that, other things being equal, a teenager with greater access to informal channels of job vacancy information and who has a high level of verbal and arithmetic ability will be less likely to experience a period of unemployment, and if he or she does, it will be of shorter duration. In addition, it is likely that teenagers with these characteristics will also be able to obtain higher paying jobs or those jobs that are considered more desirable, or both, which would tend to increase their labor force participation over teenagers without these factors.

It has been difficult to obtain a variable that directly measures an informal channel of job vacancy information and another one that directly measures a high level of verbal and arithmetic ability. As has been done with many other economic studies, we have instead selected so-called "proxy" variables. These are variables thought to encompass, somewhat imperfectly to be certain, the ideal variables that cannot be measured directly. The two proxy variables we used to measure variations in access to informal information on jobs and arithmetic and verbal achievement levels are family income levels and whether the family received any welfare income (primarily AFDC).

Teenagers from families with higher levels of income would tend to have higher scholastic achievement and more access to informal channels of job vacancy information. At a given level of family income (primarily low levels), teenagers in families on AFDC would tend to be more isolated from information than teenagers in low-income but non-AFDC households. This is because AFDC households are predominantly single-parent, female-headed, and AFDC female heads participate less in the labor force than non-AFDC female heads.

For analysis of out-of-school teenagers, the AFDC household variable measures another important factor--the work disincentives embodied in the current program rules about earnings of recipient children if they are out of school.

For in-school teenagers, we developed a variable that measured differences in scholastic achievement levels somewhat more directly than the family income and welfare household variables. This variable was based on the relationship between an individual's age, the grade level enrolled in at the time of the survey, and the average grade level of all students at that age level.

If the teenager's grade level was two or more below the average for his age, he was classified as "below normal" attainment, otherwise he would be classified as "normal attainment." Those who were "below normal" attainers are those who were "left back," to use an older terminology, and it is almost certain that they would have lower scholastic achievement scores than individuals who were not left back when they were at the same grade level. However, as we show below, large differences in scholastic achievement exist within a given age and grade level.

These were the main independent or explanatory variables of interest that we used in our multiple regression equation. Our data set was the large number of teenagers surveyed by the CPS in March of 1978. Measures on all the variables were obtained from each individual teenager reported on the CPS public use tape. Separate multiple regression equations were estimated for in-school and out-of-school teenagers. The two dependent variables, unemployment incidence and labor force participation, were each measured in two ways--in terms of observed status at the time of the survey and in terms of incidence over the previous year. Separate multiple regression equations were also run for unemployment incidence and for labor force participation. Table 18 shows all the variables that we used in all our regressions. Note that the educational attainment variable is different for the in-school and the out-of-school regressions, but all other variables are the same for the two groups.

Table 19 presents the results of our original work. The regressions use the variables defined and explained in table 18. As an aid to understanding our results, consider the regression results shown on the third line of the table. The numbers represent the values of the coefficients of the variables indicated directly above them. In our example used above, the numbers correspond to the computed values of the b's while the independent variables WH, I_1, I_2, etc., correspond to the X's. These results, designed to explain the labor force participation of out-of-school teenagers (symbolized as LS), tell us that

(1) Being from a welfare household (WH) will, holding other factors constant, 1/ decrease a teenager's probability of being in the labor force by 0.12 below one from a nonwelfare household.

(2) Being from a family with income below the poverty level (I_1) will, holding other factors constant, decrease a teenager's probability of being in the labor force by 0.13 below one from a family with income above 149 percent of the poverty line.

1/The actual difference between welfare household and nonwelfare household teenager is greater than 0.05 because teenagers from welfare households also have other characteristics that increase unemployment--e.g., income and race.

Table 18

Variables Used in the Regression Analysis

Name	Symbol	Definition
Dependent Variables		
Employment status	ES	ES = 1 if employed or unemployed less than 8 weeks; ES = 0 if unemployed more than 8 weeks.
Labor force status	LS	LS = 1 if in the labor force; LS = 0 if not in the labor force.
Employment experience	EE	EE = 1 if worked during 1977 and was unemployed 15 weeks or less; EE = 0 if if unemployed more than 15 weeks.
Labor force experience	LE	LE = 1 if worked or was unemployed for 15 weeks or more during 1977; LE = 0 if never in labor force or unemployed less than 15 weeks.
Independent Variables		
Family income	I_1, I_2, I_3	$I_1 = 1$ if family income below poverty line; $I_2 = 1$ if family income is 100-124% of poverty line; $I_3 = 1$ if family income is 125-149% of poverty line; $I_2 = I_3 = 0$ if family income is greater than 149% of poverty line.
Welfare household	WH	WH = 1 if household receives some welfare income payment; WH = 0 if not.
Educational attainment (out-of-school youth)	ED	ED = 1 if less than high school degree; ED = 0 if high school graduate.
Educational attainment (in-school youth)	AT	AT = 1 if "normal" attainment level; AT = 0 if below normal attainment level.
Race	R	R = 1 if black; R = 0 if white or another race.
Age	A	A = 1 if 16-17 years old; A = 0 if 18-19 years old.
Sex	S	S = 1 if male; S = 0 if female.
Region	Rg	Rg = 1 if in South; Rg = 0 if other region.

Table 19

Regression Equation Results: Partial Regression Coefficients

Dependent Variables	WH	I_1	I_2	I_3	ED	AT	R	A	S	Rg	R^2	n
	Independent Variables											
Out-of-School Teenagers												
ES	-.05*	-.03*	-.05*	-.01	.00		-.12*	.00	-.01	.02	.04	4,689
EE	-.08*	-.10*	-.08*	.03	-.04*		-.11*	.03*	-.05*	.04*	.05	4,819
LS	-.12*	-.13*	-.09*	-.08*	-.09*		-.05*	-.06*	.20*	-.04*	.13	5,927
LE	-.15*	-.15*	-.07*	-.07*	-.07*		-.13*	-.12*	.13*	-.01	.17	5,927
In-School Teenagers												
ES	-.01	-.05*	-.02	-.00		.05*	-.17*	.00	.00	.01	.05	4,365
EE	-.03	-.05*	-.05*	-.01		.04*	-.09*	.01*	-.02*	.04*	.03	6,132
LS	-.01	-.09*	-.04	-.09*		.07*	-.11*	-.04*	.04*	-.07*	.03	10,525
LE	-.02	-.14*	-.05	-.08*		.14*	-.17*	-.22*	.08*	-.03*	.10	10,525

The * symbol indicates that the variable is statistically significant (i.e., it has a value according to the "t" table of two or larger). This means that it is very unlikely that the underlying value of the coefficient could be equal to zero (given its observed value), the R^2 value, sample size, and the degree of intercorrelation between the X_i. See chapter 5 for more detailed discussion.

(3) Being from a family with income between 100 percent and 124 percent of the poverty line (I2) will, holding other factors constant, decrease a teenager's probability of being in the labor force by 0.09 below one from a family with income above 149 percent of the poverty line.

(4) Being from a family with income between 124 percent and 149 percent of the poverty line (I3) will, holding other factors constant, decrease an teenager's probability of being in the labor force by 0.08 below one from a family with income above 149 percent of the poverty line.

(5) Being a high school dropout (ED) will, holding other factors constant, decrease the teenager's probability of being in the labor force by 0.09 below that of a high school graduate.

(6) Being black will, holding other factors constant, decrease a teenager's probability of being in the labor force by 0.05 below a white teenager.

(7) Being 16-17 years old does, holding other factors constant, decrease a teenager's probability of being in the labor force by 0.06 below that of an 18-19 year old.

(8) Being a male will, holding other factors constant, increase a teenager's probability of being in the labor force by 0.20 over that of a female teenager.

(9) Being from the South will, holding other factors constant, reduce a teenager's probability of being in the labor force by 0.04 below a teenager from the non-South.

Note, unfortunately, the rather low R2 values, especially for the in-school group. They indicate that overall our variables cannot explain much of the variation among individual teenagers in the incidence of unemployment or of labor force participation. Like all individual differences in behavior, they are dominated by detailed individual differences in personal characteristics and special situational factors that cannot be captured by our crude measures. The very large sample sizes, however, allow us to obtain some meaningful results on the sizes of the coefficients of the individual variables.

Overall, the variables appear to do a better job of explaining employment experience for the out-of-school than for the in-school teenage group. This better job of explaining is mainly due to the better performance of the WH variable in the out-of-school group regression, which in turn probably reflects the special disincentive effects it measures among out-of-school teenagers who are members of AFDC recipient households.

The large and consistent effects generated by the income variable (I_1, I_2, I_3) are striking and suggest that they are good proxies for both information and scholastic achievement factors. For example, among out-of-school teenagers, being from a poverty family will, holding other factors constant, reduce a teenager's employment experience rate (EE) by 10 percentage points below what it would have been if he had been from a family with income 150 percent or more of the poverty line. [1] Among in-school teenagers, this same difference is 5 percentage points. For labor force participation, the effects are even greater. For the LS measure, the net difference between poverty family and families with incomes 150 percent or more of the poverty line was 13 percentage points for out-of-school teenagers and 9 percentage points for in-school teenagers. The fact that family income produces such strong effects on labor force participation probably means that teenagers from these families obtain higher paying jobs, or more desirable jobs, or both--as well as locating them more easily. This is because we would expect, holding other factors constant, high family income to reduce labor force participation of teenagers--they simply would have less need for the money. The fact that the observed coefficients are large and positive means that the overall labor market advantages of teenagers from higher income families must be quite significant--significant enough for them to outweigh the negative effect of family income on the need to work.

The disincentive effects monitored by the WH variable appear to be important. [2] Among out-of-school teenagers, being in a WH family will, holding other factors constant, reduce the LS measure of participation by 12 percentage points and the LE measure by 15 percentage points. The role of the WH variable in influencing unemployment incidence via its influence on access to channels of information only appears significant for the out-of-school group. [3] In the in-school equations, the WH coefficients in the ES and EE equations are small and not statistically significant.

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[1] The partial regression coefficients in table 9 are shown as fractions, not percentages, e.g., the coefficient of I, in the EE equation for out-of-school teenagers is 0.10, not 10. This is because the dependent variable is either zero or 1 and the regression coefficients therefore are, in probability, terms that are fractions. One multiplies them by 100 to get percentages.

[2] It is important to note that out-of-school youth in WH families have more incentive to underreport their earnings and labor force participation to survey takers. Therefore, our disincentive efforts estimates are probably upward biased to some unknown degree.

[3] Recall that we do not expect the WH variable to produce any labor force effects among in-school teenagers, because for them the AFDC program does not contain any work disincentive.

Further analysis could not turn up any reasonable explanation for this asymmetry.

The results of the race variable (coefficient under R in table 19) can be interpreted as showing the amount of the gross racial difference in the dependent variable that cannot be explained by racial differences in the independent variables included in the equations. For example, the coefficient of R for the LS equation for out-of-school teenagers, -.05, means that after taking into account racial differences in all the explanatory variables a 5 percentage point difference still remains between black and white teenagers in labor force participation rates. The significance of these "net" effects of race can be seen by comparing them with the "gross" racial differences in the dependent variables. These are simply the differences one observes when the comparisons are not adjusted for any factors at all.

The gross racial differences in the dependent variables for each teenager group along with the corresponding "net" coefficients from table 19 are shown in table 20.

Table 20

Gross and Net Racial Differences (White--Black) a/
in the Dependent Variables
(percentages)

Dependent Variable	Out-of-School Teenagers	In-School Teenagers
ES	-14 (-12)	-20 (-17)
EE	-15 (-11)	-11 (-09)
LS	-17 (-05)	-16 (-11)
LE	-25 (-13)	-24 (-17)

a/Net racial differences are in parentheses. They are the partial regression coefficients from table 9 times 100.

It is clear from the table that for some of the dependent variables and for the out-of-school subgroup our variables accounted for a significant part of the racial difference in unemployment and labor force participation. This was especially so for labor force participation among out-of-school teenagers and is attributable to the effect of the WH variable and the difference in this variable between black and white teenagers. However, it is just as clear that significant amounts of some of the differences were not explained by our model.

A final finding is the effects of our AT variable. Note the large and statistically significant coefficients for this variable in the equations for all four dependent variables. Being a teenager with below normal attainment means, holding other factors constant, unemployment rates about 5 percentage points higher (ES equation 0.05 and EE equation 0.04), and labor force participation rates (LS) about 7 percentage points lower. In terms of the experience measure (LE), the labor force difference is much higher--14 percentage points more have no labor force experience at all during the year. These results suggest that if we had direct measures of scholastic achievement for each teenager in our sample (e.g., scores on standardized tests) we would explain much more of the variation in unemployment incidence and labor force participation.

In conclusion, it is important to briefly note the inherent limitations of any causal analysis based on non-experimental data. All the data underlying our equations is collected by the Census Bureau as part of their on-going descriptive survey of household socioeconomic characteristics. Individual teenagers have not been randomly assigned to various categories of our independent variables--e.g., a set of teenagers who were not in welfare households at the time of the survey were not then randomly divided and either put in one or the other. We have used the observed division of teenagers between these households at the time of the survey and attempted to adjust, using multiple regression analysis, for any differences in significant factors that we could observe--e.g., age, region, income, etc. However, one can never be sure with this retrospective method that some important factor has been overlooked--e.g., a personality trait--so that our conclusion about a causal relation between WH and labor force participation may be spurious.

In chapter 5, we analyze these issues in great detail in connection with a critique of the evidence relating unemployment and crime. The readers should keep the analysis of this section in mind when reading that analysis and try to come to their own conclusion of the degree of validity of our findings in this chapter.

DATA ON PATTERNS OF SCHOLASTIC ACHIEVEMENT AMONG TEENAGERS

The available data on the educational deficiences of teenagers in basic skills such as reading, writing, and mathematics are described here. First, we examine the results from tests that estimated the degree of functional literacy among the teenage population. Second, we present data from the Adult Performance Level Project, a competency based test that is perhaps more closely related to employment success. Finally, we review several other data sources that measure educational achievement. 1/

1/Literacy, competency, and achievement tests are strongly influenced by quality of schooling, family income, education of parents, and other background factors.

Functional literacy among teenagers

Estimating the number of teenagers with educational deficiencies requires a standard of achievement against which the test results for each teenager can be compared. Several tests have been developed and given to national samples of the population.

One of the most recent assessments of the educational achievement of teenagers was the Mini Assessment of Functional Literacy (MAFL) conducted in 1974 by the National Assessment of Educational Progress. This test, which was administered to a nationally representative sample of 17-year-old students, was designed to measure the extent of functional literacy among the population. 1/ The National Right to Read Effort, which commissioned the study, determined that students who failed to answer correctly 75 percent of the exercises would be considered functionally illiterate.

These exercises required only basic skills in reading and understanding written materials including passages, graphic materials (drawings, charts, maps, forms), and reference materials (dictionaries, encyclopedias, and telephone directories). The following sample questions illustrate the level of reading skill required for a student to be considered functionally literate:

--A picture of four doors labeled "Principal," "Nurse," "Cafeteria," and "Library" is presented and the student is asked to identify the door where one would go for lunch.

--A copy of an auto insurance policy statement is presented and the student must determine the maximum amount of coverage for medical bills under the policy.

--A listing of telephone area codes and long distance information is presented and the student must identify the number to call to obtain a number in New York City.

Tables 21 and 22 show the MAFL test results by various demographic characteristics. Overall, 12.6 percent of the 17-year-old students were found to be functionally illiterate.

The illiteracy rate for certain socioeconomic subgroups is, however, higher than this overall rate. The disparities between disadvantaged and advantaged teenagers are quite wide. For those teenagers defined as educationally disadvantaged, the illiteracy rate was 25.8 percent, a rate almost three times the rate for educationally advantaged teenagers.

1/Charles J. Gadway, Functional Literacy: Basic Reading Performance (Denver, Colorado: National Assessment of Education Progress, 1976).

Table 21

Teenagers (17 Years Old) Who Scored Below 75 Percent on the MAFL, By Color and Education of Parents (percentage)

Color	Total	Education of Parents: Advantaged	Education of Parents: Disadvantaged a/
White	8.2	6.6	15.6
Black	40.9	30.0	57.0
Other	30.5	27.8	29.3
TOTAL	12.6	8.8	25.8

a/Neither parent completed high school.

Source and definitions: see text discussion.

Table 22

Youths (12-17) Who Scored Below the Literacy Cut-off of the Brief Test of Literacy, By Color and Education of Parents a/ (percentage)

		Education of Parents			
Color	Total	None	Elem.	High Sch.	College
White	3.2	21.9	6.5	2.3	0.6
Black	15.0	52.8	18.2	12.0	1.8
TOTAL	4.8	27.4	8.9	3.5	0.6

a/Parents' education is for the first listed parent.

Source: See text discussion.

Several other tests of functional illiteracy were administered to national samples of the population in the early 1970s. We show only the results of one of these broken down by socioeconomic characteristics. 1/

1/The results from the other surveys are broadly consistent with the ones we show. Most of the apparent disparities are a function of the difficulty of the cut-off point chosen to define functionally illiterate. The differences among subgroups would not be affected by this issue. See Fisher, Functional Literacy in the Schools, U.S. Dept. of Health, Education, and Welfare, National Institute of Education, Jan. 1978.

The Brief Test of Literacy was administered to youths 12 to 17 years old as part of the Health Examination Survey (1966 to 1970). 1/ For the purpose of the test, literacy was defined as the level of reading skills attained by the average child in the United States at the beginning of the fourth grade. As shown in table 22, 4.8 percent of youths did not meet the literacy standard of this test. Although this is significantly lower than the MAFL aggregate illiteracy rate, the disparities among subgroups within the population are similar.

As with the MAFL data, there are also significant differences by educational attainment of the parents. The Brief Test of Literacy also reported illiteracy rates by the grade placement of the teenagers. As expected, the further a teenager's grade placement is below normal, the higher the probability he scores below the literacy cut-off. This provides some direct evidence that our normal/below normal attainment variable in the regression analysis was capturing primarily the effects of achievement differences.

Functional competency: The Adult Performance Level (APL) Project

The studies described above, which assess functional literacy of the population, are designed to measure the ability to read and understand written material. One study that went beyond this traditional notion of literacy was the Adult Performance Level Project, conducted in 1974 by Norvell Northcutt at the University of Texas (Austin). 2/ The objectives of this project were to "specify the competencies which are functional to economic and educational success in today's society." 3/ To measure the level of functional competency within the population, the project developed a series of tests within each of five general knowledge areas and tested the performance of a national sample of adults. These tests require the individual to perform tasks such as

--filling out a sample check to pay for a purchase,

--completing a letter to a Congressman to express opposition to a bill,

--addressing a business envelope, and

1/Dorothee Vogt, Literacy Among Youths 12-17 Years, Vital and Health Statistics, Series 11-131 (Washington, D.C.: U.S. Government Printing Office), December 1973.

2/Adult Performance Level Project, Adult Functional Competency: A Summary (Austin, Texas: University of Texas, Office of Continuing Education, March 1975).

3/Ibid., p. 1.

--completing missing information on an application for a Social Security number.

Test scores were then correlated with measures of the actual economic status of the individual test taker. The test scores were found to be significantly correlated with economic status measures, and these correlations were used to establish correspondence between test score levels and functional competency levels. For example, the APL 1 category ("functionally incompetent") contains individuals who had below poverty level income, 8 or fewer years of schooling, and were unemployed or unskilled. Thus, the APL 1 category contains the individuals who ranked lowest by test score, and most (but not all) of these individuals had the above three low socioeconomic characteristics.

Table 23 shows the overall percentage of the youths 18 to 24 years old who were measured as functionally incompetent (APL 1 category) and by color and income level. According to the APL results, 19 percent of youths (18 to 24 years old) were functionally incompetent.

Table 23

Youths (18-24) who Scored in the APL 1 Category (Functionally Incompetent) by Color and Family Income (percentage)

		Family Income	
Color	Total	Below poverty	Above poverty
White	12	14	11
Black	53	61	48
Other	50	48	51
Total	19	32	16

Source: See text discussion.

Other assessments of educational achievement

Two additional sets of educational data were identified in our literature review. These include results from (1) the National Assessment of Educational Progress tests in reading and basic skills 1/ and (2) The National Longitudinal Survey of the High

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1/W. Vance Grant and C. George Lind, Digest of Education Statistics, 1979 (Washington, D.C.: Department of Health, Education, and Welfare, National Center for Education Statistics, 1979).

School Class of 1972.[1] These tests do not provide an absolute standard of "competency" or "literacy" against which to compare the population. Rather, they simply use the average performance of the population (i.e., all teenagers) as the norm and then compare the performance of subgroups within the population to these population norms.

Table 24 shows how selected subgroups of 17-year-olds performed relative to the national population on the NAEP assessments of reading and basic skills. As with all our other presentations, large and significant differences in performance by indicators of socioeconomic status exist.

Students in the National Longitudinal Survey of the high school class of 1972 were given a battery of tests in the following areas: vocabulary (ability to understand the English language), reading (ability to read and understand short passages of nontechnical material), mathematics (ability to solve reasoning problems involving quantitative comparisons, but not requiring algebraic, geometric, or trigonometric skills), letter groups (ability to find general concepts in a nonverbal context); mosaic comparisons (perceptual speed and accuracy); and picture number (rote memory skills).

Table 25 shows how selected subgroups of high school seniors performed relative to the national average on the various tests given in the National Longitudinal Survey. Again, we find the familiar patterns by socioeconomic status of the family.

SUMMARY

The above compilation suggests that there are important differences between socioeconomic groups in the degree to which

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National Assessment of Educational Progress, The First National Assessment of Career and Occupational Development: An Overview (Denver, Colorado: National Assessment of Educational Progress, November, 1979).

[1] William B. Fetters, National Longitudinal Study of the High School Class of 1972: Student Questionnaire and Test Results By Sex, High School Program, Ethnic Category and Fathers' Education (Washington, D.C.: U.S. Department of Health, Education, and Welfare 1975).

William B. Fetters, National Longitudinal Study of the High School Class of 1972: Student Questionnaire and Test Results By Academic Ability, Socioeconomic Status and Region (Washington, D.C.: U.S. Department of Health, Education, and Welfare, 1976).

Table 24

NAEP Results on Reading and Basic Skills by Race and Education of Parents (percent of correct answers on test) a/

Characteristics	Reading	Basic Skills			
		Computation	Graphic	Written	Manual
National Mean	72	70	80	63	66
Color					
Black	55	49	59	53	53
White	75	73	84	64	69
Parental Education					
No high school	62	60	69	59	58
Some high school	65	63	72	58	60
Grad. high school	71	69	79	62	66
Post high school	77	76	86	67	70

a/Percentages have been rounded to nearest whole number.

Sources: W. Vance Grant and C. George Lind, Digest of Education Statistics, 1979 (Washington, DC: Department of Health, Education, and Welfare, National Center for Education Statistics, 1979), p. 31.

National Assessment of Educational Progress, The First National Assessment of Career and Occupational Development: An Overview (Denver, Colorado: National Assessment of Education Progress, November, 1976).

Table 25

National Longitudinal Survey of the High School Class of 1972 Results by Areas and Selected Socioeconomic Characteristics (percentage of answers correct)

Characteristic	Vocabulary	Picture/ Number	Reading	Letter Groups	Math.	Mosaic Comp.
National Mean	43	57	49	65	52	39
SES						
Low	30	51	38	56	38	36
Medium	43	57	49	66	52	40
High	57	63	61	74	67	43
Race						
White	46	59	52	68	55	41
Black	20	41	28	45	26	28
Father's Education						
Not HS Grad.	36	55	44	62	45	38
HS Grad.	45	59	52	69	55	41
College Grad.	58	63	62	75	68	43

Sources: Fetters, op. cit.

GAO tabulations of published results.

they are being prepared in the basic skills needed to function in a modern economy--reading, writing, and mathematical skills.

There is, however, one caveat that the reader should consider in evaluating the significance of these data. The factor of ultimate interest is not the teenager's score on the test. It is rather productivity on the job, and although performance on the test is almost certainly correlated with susequent productivity on the job, it may not be *closely* correlated. In addition, some feel it may be a good predictor for one socioeconomic group (e.g., middle class whites) but a poor predictor for another (e.g., lower class blacks)--i.e., the tests may be "culturally biased."

A detailed survey of the literature on cultural bias in tests is beyond the scope of the present study. However, this does not mean that the achievement gaps in the existing test data should be ignored. Many educators around the country do think they are significant enough to be used as a guide for allocating remedial resources and monitoring student progress. Others, however, hold the view that existing test instruments are not culturally biased. Whatever the relative merit of these positions, a desirable approach would be to focus efforts on closing these achievement gaps. They will not only be helping with whatever serious teenage unemployment exists but also with improving the life chances of these individuals far beyond their experience as teenagers.

CHAPTER 5

TEENAGE UNEMPLOYMENT: EFFECTS ON FUTURE LABOR MARKET OPPORTUNITIES AND CRIMINAL BEHAVIOR

One reason people are concerned about teenage unemployment is that they believe it may have serious effects beyond the immediate loss of income and the frustration incurred by the teenager. The most serious side effect is that teenagers might engage in criminal activity. The other, although less dramatic effect, is that the unemployment experience may hinder a teenager's future labor market experience.

In this chapter we present surveys of the existing evidence. Many more studies have been written on the teenage unemployment/crime link than on the teenage unemployment/future labor market success relationship. After a brief section on the latter, the rest of the chapter and appendix II presents a critical survey of the literature on the criminal behavior effect.

EFFECTS ON FUTURE LABOR MARKET SUCCESS

Our analysis in the earlier chapters has shown that because of the type of unemployment experienced by the majority of teenagers--short duration, involving only a part-time job, begun and terminated voluntarily by the teenager--it would probably not have any long run effects on labor market success. However, some periods of unemployment are long and occur in a context suggesting a serious need for a full-time job. These types of experiences could, in principle, have long run effects. The effect could operate through a number of channels--loss of job experience, loss of hard-to-obtain information on career ladders, loss of motivation, or some combination of these. But it is also plausible that even long periods of unemployment may not have any serious long run effects. Individuals, especially when they are young, can be fairly resilient in the face of adversity. Clearly what is needed on this issue is empirical evidence--deductive speculations are highly inconclusive.

Empirical evidence on this issue, like that on so many aspects of socioeconomic behavior, however, suffers from uncontrolled elements. It is rarely possible to assemble groups of individuals who differ only in the variables whose effects you want to study. 1/ At best, data can be assembled on nonrandomized

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1/The exceptions are the recent income maintenance, housing allowance, and health insurance experiments. These experiments raise difficult issues on another level. See Farber and Hirsch, "Social Experimentation and Economic Policy: A Survey", Journal of Economic Literature, Volume XVI, Dec. 1978, pp. 1379-1414.

groups of individuals who are then followed through time (i.e., so-called longitudinal or "prospective" data frameworks). Although this does not solve the problem of holding other things constant, it does allow us to observe the situation both before and after the variables of interest have changed, and this can sometimes be of great help in interpreting the validity of any observed correlations. We can observe some of the factors that caused the explanatory variables to change which in turn can suggest whether the variable of interest is likely to be correlated with variables not included in the analysis. Longitudinal data also allow us to study directly how events in one segment of the life cycle effect behavior in another, which is precisely the type of problem we are studying.

Two studies based on an excellent prospective longitudinal data set are available. Collection of the basic data was begun in 1966 when a national probability sample was used to select 5,000 men to interview on their labor market status, experience, and outlook. Data on a host of personal characteristics and environmental and attitudinal variables were also collected. When interviewed the first time the men ranged in age from 14-24. Subsequent interviews, which focused on their labor market experiences, occurred annually through 1971, with telephone interviews in 1973 and 1975 bringing the total number of panel interviews to eight. Attrition rates over the years were not high as indicated by a 76 percent completion rate through the 1975 interviews. 1/

Recently a study appeared that addressed the long-term labor market effects of teenage unemployment using the NLS longitudinal file. 2/ Becker and Hills focused on men (16-19) who were not enrolled in school during 1967 and also had some work or labor force experience during that year. For those of this group who were employed in 1975, it was possible to measure their hourly wage rate, which served as the criteria for measuring long run effects. They asked the question: Is there any relation between the unemployment experience of individuals in this group 8 years ago and the wage rate level they have achieved on their current job?

Since they wanted to isolate the net effect of early unemployment experience, the authors tried to hold other factors constant. They did this statistically by running a multiple regression analysis. As we saw in chapter 3, the dependent variable (the hourly wage rate of the individual in 1975) is correlated simultaneously with variables that measure not only the factor of interest (unemployment experience in 1967) but also other

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1/Center for Human Resource Research, The National Longitudinal Surveys Handbook, Columbus, Ohio State University, 1977.

2/Brian Becker and Stephan Hills, "Teenage Unemployment: Some Evidence of the Long Run Effect on Wages", Journal of Human Resources, Volume XV, No. 3, Summer 1980.

factors that can effect the dependent variable and which may be correlated with early unemployment experience--measures of human capital factors, such as years of school completed and subsequent post-secondary training, and measures of tastes and attitudinal factors, such as marital status, number of dependents, and the score the individual made on a psychological test that attempted to measure motivation. This last measure is particularly useful to have because there is some presumption that the data will be characterized by what statisticians call "heterogeneity". That is, even after holding many personal characteristics constant, individuals will still differ by factors other than early unemployment--e.g., an individual with personality problems. The attitudinal tests obtained in the National Longitudinal Surveys at least allow for some control over this source of bias.

The regression equation they fitted was, essentially, the following 1/:

$$Y = A + B_{1}X_{1} + B_{2}X_{2} + B_{3}2X_{3}X_{2} + \sum_{1=3}^{13} B_{i}X_{i} \text{ (n = 187 observations)}$$

Where: Y = hourly wage rate in 1975

X_1 = experienced one or more periods of unemployment in 1967 (dummy variable)

X_2 = weeks of unemployment in 1967

X_3 = race (dummy vaiable, 1 = white)

X_i = control and standardizing variables--marital status, years of school completed, region of residence in 1975, etc.

Thus they estimated the effect of unemployment experience with two variables--a measure of incidence and a measure of duration. They also tested to see if the long run effects interacted with race--i.e., whether a given negative employment experience as a teenager had a stronger effect for one race than for another.

Their findings were, perhaps surprisingly, that B_1 was very large and positive. Those who experienced a spell of unemployment as a teenager had higher hourly wages as young adults. Although this positive effect diminished with the length of unemployment (i.e., B_2 was negative), it did not, for white males, eliminate the positive effects even for long periods of unemployment. For blacks, however, additional weeks of unemployment had a greater negative effect on subsequent wages (i.e., B_{32} was positive). While unemployment periods of up to 8-10 weeks had a positive or negligible effect on subsequent wage rates, anything

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1/Their actual equation contained an X_2^2 term.

beyond that time, however, had a significant negative effect for blacks. These findings are summarized in table 26. The table shows the difference between the 1975 wages of those young adults who had experienced one or more periods of unemployment in 1967 and the wages of young adults who had experienced no unemployment in 1967. The positive effects for those who experienced short periods of unemployment are quite striking in percentage terms--e.g., a white male who had experienced unemployment for 2 weeks had wages, on average, 28.1 percent higher than white males who had not experienced any unemployment as a teenager. For blacks, the positive effects disappear for periods of unemployment greater than 8 weeks. The large negative values for blacks at very long periods cannot be taken too seriously, however, because they result from the particular functional form used by the authors to describe the interaction between race and the effect of unemployment on wages. Also, the coefficient estimate (of B_{32}) was just on the borderline of statistical significance.

Table 26

Absolute and Percentage Change in Average Wages by Duration and Race (Direct Effect)

Weeks Unemployed	Black		White	
	Absolute (in cents)	Percent	Absolute (in cents)	Percent
1	154.51	29.3	163.64	31.1
2	129.63	24.6	147.89	28.1
3	105.73	20.1	133.12	25.2
4	82.81	15.7	119.33	22.6
5	60.87	11.5	106.52	20.2
6	39.31	7.6	94.69	17.9
7	19.93	3.8	83.84	15.9
8	0.93	0.2	73.97	14.0
9	-17.09	-3.2	65.08	12.3
10	-34.13	-6.5	57.17	10.8
11	-50.19	-9.5	50.24	9.5
12	-65.27	-12.4	44.29	8.4
13	-79.37	-15.1	39.32	7.5
14	-92.49	-17.5	35.33	6.7
15	-104.60	-19.8	32.35	6.1

Source: Becker and Hills, "Teenage Unemployment...." _Op. Cit._, p. 366, Table 3.

Thus, this study finds that even among teenagers who experienced unemployment while out of school, there is not much evidence of any adverse effect on future labor market opportunities. For blacks, or course, the findings require a slightly modified statement. [1]

We could only find one other study that attempted serious empirical analysis of this issue. [2] Stevenson applied a quite different statistical methodology and used slightly different variables than Becker and Hills did even though they both used the same longitudinal data file. For males, Stevenson's conclusions appear broadly consistent with those of Becker and Hills. As noted in chapter 2, Stevenson did find a very large and significant effect among women and we gave there the argument about why the results for women are so difficult to interpret.

EFFECTS ON CRIMINAL BEHAVIOR

Politicians and members of the general public believe a connection between crime and unemployment exists. To cite a single example, the late Senator Hubert Humphrey stated in an address to the Joint Economic Committee that if "youths don't have a chance to earn money on a job, they get money in the streets." [3]

Despite the widespread and intense belief that unemployment is a significant cause of crime, convincing empirical evidence does not exit. [4] This is not to say that there is absolutely no positive relation. For example, it is highly unlikely that a decrease in the time it takes a teenager to find a job would increase crime, so if anything the crime rate would decrease. The issue is whether the decrease would be quite significant or only slightly greater than no change. On this question, unfortunately, the existing empirical data do not shed much light.

Moreover the situation is made more difficult to interpret because of the way unemployment is measured. Teenagers that lack personal qualifications may report themselves as out of the labor force and not interested in a job. Some teenagers in this group may well be pushed into criminal behavior because of their inability to qualify for a job, but they would not show up in the data as being unemployed in the period before committing their crime. Thus, the existing data only fails to support the notion that inability to find a job by an otherwise qualified teenager is a significant cause of juvenile crime. A serious lack of personal qualifications could still be a factor.

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[1] One shortcoming of the Becker-Hills study is that they did not analyze for possible differences in occupational status. It is possible that jobs with longer run growth potential could have the same level of wages as a lower growth occupation in the early years of the career pattern.

[2] Wayne Stevenson, "The Relationship Between Youth Employment and Future Employability and Earnings", in Supplementary Papers From the Conference on Youth Unemployment: Its Measurement and Meaning, U.S. Department of Labor, Employment and Training Administration, Office of Youth Programs, Oct. 1978.

[3] Ninety-fourth Congress, second session, September 1976.

[4] Others have come to the same conclusion. See Richard A. Tropp, "Suggested Policy Initiatives for Employment and Crime Problems," in Crime and Employment Issues (The American University Law School, Institute for Advanced Studies in Justice, 1978).

The sections that follow present critical reviews of the more salient studies on the teenage crime determinants. These are as brief and nontechnical as possible. Appendix II contains a more detailed and technical critique.

Studies using aggregated data

Economists have done most of these studies and they are the only ones that focus directly on the economic determinants of crime. Unfortunately these studies are also subject to the most serious problems of statistical methodology and interpretation.

An important feature of these studies is that they all use geographical areas or time periods to generate their data points. They either correlate teenage unemployment rates and crime rates across areas (e.g., across all large cities, across all census tracts within a single large city, etc.) or over time (e.g., annual teenage unemployment rates and crime rates over a 25 year period). These data invariably show a positive association between unemployment rates and crime rates when a simple correlation is fit to the data. That is to say, it is true that across areas and over time a simple regression between unemployment (UR) and crime (CR)

$$CR = a + b \cdot UR$$

yields a positive value for b and a statistically significant degree of positive correlation.

However, once variables other than unemployment are added to the equation the picture changes significantly. For example, if a trend variable is added in order to account for other major causes of crime that may have changed steadily over time, the positive partial correlation between crime and unemployment that remains is much smaller than in the simple correlation. Since we do not know if other causal factors have changed over time, the time series correlations using aggregate data are not very illuminating. However, about the most significant piece of existing evidence for the unemployment/crime connection is to be found in the time series data. There definitely seems to be a pro-cyclical relation that can be seen by visually examining the charts of the two series: When teenage unemployment rises because of a general business cycle their crime rate also tends to rise. However, the degree of correspondence is not that close and an important alternative hypothesis can explain this cyclical association--i.e., it is the lowered income of the family that is motivating the teenager to commit crime rather than his own unemployment. Without longitudinal data on individual teenagers, these hypotheses cannot be distinguished.

Similar problems of data and proper specification of causal variables plague the studies that correlate aggregate data across areas. They have not been able to measure enough of the possible causes of crime other than unemployment to make their analyses convincing. This is particularly important with unemployment and crime because there is reason to believe that a "built-in" correlation between them would exist even if there were no causal relation. Thus, teenagers who are going to commit crime regardless of their employment experiences may also tend to quit (or be fired from) their jobs more often. Therefore, in areas where there were more of these problem teenagers, both the crime rate and the unemployment rate would tend to be high. As we show below, there is fairly strong evidence that psychological, environmental, and sociological factors significantly affect the propensity to commit crime.

Thus, it is quite possible that the observed crime/unemployment correlation in these studies primarily reflects other factors. One study in this group 1/ did try to control for some of these other factors. Fleischer concluded that when he entered measures of some of these other factors in his equations he was unable to isolate any net effects on crime rates for either unemployment or for the other factors. This finding does not rule out a significant causal role for unemployment, but it does mean that across areas unemployment rates are so highly correlated with measures of family background variables that one cannot, statistically, unravel the separate effects.

Studies by economists using aggregated data reviewed

M. Harvey Brenner. Estimating the Social Costs of Youth Unemployment Problems.

__________________. Estimating the Social Costs of National Economic Policy.

Bechdolt, Burley V. Jr. "Cross-Sectional Analyses of Socioeconomic Determinants of Urban Crime," *Review of Social Economy*, October 1975, 33(2), pp. 132-140.

1/Belton M. Fleischer, "The Effect of Income on Delinquency," *The American Economic Review*, March, 1966, 56(1), pp. 118-137.

Block, Michael K. and Heineke, John M. "A Labor Theoretic Analysis of the Criminal Choice," *The American Economic Review*, June 1975, 65(3), pp. 314-325.

Ehrlich, Isaac. "Participation in Illegitimate Activities: A Theoretical and Empirical Investigation," *Journal of Political Economy*, May/June 1973, 81(3), pp. 521-565.

Fleischer, Belton M. "The Effect of Income on Delinquency," *The American Economic Review*, March 1966, 56(1), pp. 118-137.

———. *The Economics of Delinquency*. Chicago, Quadrangle, 1966.

Phillips, Llad; Votey, Harold L. Jr.; and Maxwell, Harold. "Crime, Youth, and the Labor Market," *Journal of Political Economy*, May/June 1972, 80(3), pt. 1, pp. 491-504.

Sjoquist, David L. "Property Crime and Economic Behavior: Some Empirical Results," *The American Economic Review*, June 1973, 63(3), pp. 439-446.

Studies using data on individual teenagers

Psychologists and sociologists have been studying the determinants of teenage crime and delinquency empirically since the 1920s. In striking contrast to the economists, they have only used data frameworks in which the individual teenager is the unit of observation.

These studies have been of two types. One type takes a sample survey of a general population of teenagers (usually it is a general population from a low income neighborhood), collects data on their criminal behavior and other characteristics, and then compares the characteristics (family relationships, neighborhood relations, school performance, etc.) of those teenagers who committed crimes with those who did not. The other type of study arises in connection with the many delinquency prevention projects that have occurred since the 1930s. In these projects a specific "treatment" or "cure" for juvenile criminal behavior is being tested. A sample of teenagers is divided up into an experimental and a control group with the teenagers in the experimental group receiving the treatment. The criminal behavior of both groups is monitored. At the end of the program the crimiminal activity of both groups is compared to see if those in the experimental group engaged in less crime. 1/

1/We did not attempt to survey the very large number of offender rehabilitation programs. This is an unfortunate omission because many of the rehabilitation programs use employment and

Unfortunately, we could not locate any general sample survey type study that attempted to measure "inability to find work" and study it as a possible determinant of juvenile crime along with the family and other variables. Thus, to some extent we are in the same position as with the first group of studies--an important possible cause of crime is omitted from the analysis. However, it does not seem as likely that there would be an analogous "built-in" correlation problem. Would a warm and close relationship between a teenager and his father or mother be changed significantly if the son experienced some difficulty finding a job? Perhaps, but it does not seem as likely as in the case of the son who has an estranged relationship with his father who is also having difficulty holding a job.

All of the studies in this group that we surveyed reported very significant and strong correlations between juvenile crime and family relationship variables and juvenile crime and the teenager's peer group relations and pressures. These findings are not, of course, evidence against the unemployment/crime connection, but they are a major reason for doubting the reliability of the findings of the first group of studies that included unemployment but not these family and other variables.

The findings from the evaluations of the delinquency projects are not very helpful with regard to our issue. One Law Enforcement Assistance Administration sponsored study of ten projects concluded that none of the treatments appeared to have had any effect on reducing delinquent behavior. 1/ The incidence of criminal behavior among the experimental group and the controls was about the same in all the experiments.

Most of the treatments used involved trying to insure that the teenager would receive attention and involvement with family surrogates--counselors, social workers, psychologists, etc. Some of the treatment programs also involved promises of help with finding employment.

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employment related treatments to prevent recidivism. However, the evidence from this source might not be that meaningful because something that works as a rehabilitation device may not be an important preventive mechanism. Once someone has committed a crime and been caught he/she may be ready to reform and a job opportunity would be very important. However it does not follow that a job opportunity would have prevented him/her from becoming a criminal in the first place.

1/LEAA also sponsors the National Assessment Center of Delinquent Behavior and Prevention at the University of Washington. This center maintains a data base on all delinquency prevention projects and does extensive survey and evaluation studies of the projects. We were not able to obtain any of their material for this study.

Studies on individual teenagers reviewed

William Berleman. Juvenile Delinquency Prevention Experiments: A Review and Analysis, (U.S. Department of Justice, Law Enforcement Assistance Administration, Office of Juvenile Justice and Delinquency Prevention, Washington, D.C., 1980).

Glueck & Glueck. Of Delinquency and Crime, (Charles C. Thomas, Springfield, Ill., 1974).

Travis Hirschi. Causes of Delinquency, (University of California Press, Berkeley, 1971).

Jenkins, et al. The Behavioral Demography of the Young Adult Male Offender, (Rehabilitation Research Foundation, P.O. Box 3587, Montgomery, Alabama 36109).

Delinquency in American Society. (Law Enforcement Assistance Agency, Institute of Juvenile Research, Chicago, Ill., 1978).

Two studies in the process of being carried out are: Delinquency in a Birth Cohort and Predicting Adult Criminal Careers from Juvenile Careers, both sponsored by the National Institute of Juvenile Justice and Delinquency Prevention (NIJJDP) of the Law Enforcement Assistance Administration, Department of Justice.

Surveys of offenders

The final source of information we covered was data collected on incarcerated offenders. The RAND Corporation had conducted two in-depth interview surveys with small and moderate sized groups of prisoners in California state prisons. 1/ The offenders were asked questions about their criminal records, how they were treated by the criminal justice system, their motivations for committing crime, drug use, etc.

In the small group study the offenders were asked if "losing a job" was a contributing factor to their committing crime; 4.8 percent said "yes" with regard to the crime committed when they were juveniles while 15.6 percent said "yes" for the crimes committed during their adult life.

1/Petersilia, et al., Criminal Careers of Habitual Felons, (R-2144-DOJ, RAND Santa Monica, California, 1977.)

Peterson, et al., Doing Crime: A Survey of California Prison Inmates, (R-2200-DOJ, RAND, Santa Monica, California, 1980.

In the other RAND study the question did not distinguish the life cycle stage of criminal behavior. The offenders (who were all beyond their teens at the time of the survey, with 80 percent over 25) were shown a list of possible reasons for committing crime and told to assess the importance of each reason (i.e., very important, somewhat important, etc.) in causing them to commit the crime that led to their current incarceration. About 30 percent of the offenders in the sample said that "couldn't find a job" was a very important reason for their committing their most recent crime.

Another source of information on youthful offenders is a very detailed and comprehensive survey of the characteristics of state prison inmates done by the Census for LEAA in 1974. 1/ No attitudinal questions were asked, but data were gathered on a host of objective personal characteristics including employment status in the month preceding the latest arrest.

Offenders who were 18-19 at the time they last entered prison had an unemployment rate of 21 percent during the month preceding their latest arrest. This is the number of prisoners who said they were looking for work during that month divided by the sum of those who said they were employed for pay and those who said they were looking for work. It is important to break down the 21 percent figure by race because blacks are greatly overrepresented in the prison population, and they generally have much higher levels of unemployment than whites. The unemployment rate for black offenders in this group was 23.2 percent for the white . offenders it was 18.5 percent. Almost all of this subgroup of prisoners had been arrested within the period 1970-74. During this period the official unemployment rate for all blacks 18-19 years old was about 24 percent and for whites 18-19 years old it was 12 percent.

In sum, it seems fair to say that the evidence from both offender statements about their motives for crimes and their reports of their employment status preceding arrest represents a mixed picture concerning the issue of whether inability to find a job is a significnt cause of crime. The statements about motives for teenage crime show a very small percentage who said that inability to find a job was important. The higher percentage who said that inability to find work caused them to commit crimes when they were adults could reflect the fact that as one accumulates a criminal record it becomes harder and harder to find a job. This is not the same thing as saying that inability to find a job causes a person to start committing crime in the first place.

1/ Profile of State Prison Inmates: Sociodemographic Findings From the 1974 Survey of Inmates at State Correctional Facilities, National Prisoner Statistics Special Report SD-NPS-SR-4, August 1979, U.S. Department of Justice, Law Enforcement Assistance Administration.

Comparing the reported unemployment rates of offenders who were 18-19 at the time of arrest with those of the entire 18-19 year old population shows no difference for blacks and a higher rate for whites. The difference for whites, however, may be accounted for by lower levels of educational attainment than non-offenders, and unemployment is related to educational attainment in both offender and non-offender populations. Also it appears likely that prisoners' responses would be biased in the direction of overstating their unemployment in the pre-arrest period.

Conclusion

The claim that a teenager's inability to find a job can have an effect on his propensity to commit a crime is intuitively plausible. However, the existing empirical evidence on the determinants of crime does not shed any light on how important the effect of unemployment is. The studies that suggest it may be significant are flawed in terms of statistical methodology, and the studies that are better statistically focus on variables other than unemployment.

As noted, however, inability to find a job is not the only way that the labor market might operate to induce crime. Being unable to qualify for a job would appear to be, a priori, much more conducive to criminal behavior, but, because of data limitations, we have not been able to focus very precisely on this group. Teenagers unqualified for jobs are a serious social problem (see chapter 3) even if they do not commit crimes. That they may also be contributing to crime makes the situation even more urgent.

A final point relates to the important distinction between low wage jobs and unemployment. A "job-qualified" teenager might not be driven to crime by a moderately difficult period of unemployment. Faced with a lifetime of modest paying jobs (relative to his/her aspirations) however, the teenager might be tempted. The relevant public policy response here is not obvious.

CHAPTER 6

CONCLUSION OBSERVATIONS AND IMPLICATIONS

The high measured rate of teenage unemployment does not accurately indicate either the degree or the type of labor market problems facing teenagers. Perhaps the lesson is that we should all approach aggregate social statistics with care, trying always to delineate what aspects of human behavior and welfare they are measuring. Some of our other findings, however, do have implications for policies and programs.

Our analysis on the number and type of teenagers in need of help leads us to conclude that the recent emphasis on work experience should probably be shifted toward finding some kind of services that will help all those teenagers that are deficient in scholastic achievement, whether they are employed, unemployed, or out of the labor force.

Based on our analysis of the labor market deficiencies of teenagers, we conclude that reducing the educational achievement gap between disadvantaged and advantaged teenagers needs to be stressed. It is important to note, however, that although we conclude that educational achievement deficiencies are a major component of teenage labor market problems, we do not know which specific programs or policies will solve the problem. Further research and development activities are needed in the following areas:

--encouraging the development of micro data bases that contain detailed family background, educational achievement, and labor force information on a longitudinal basis so that the relationship between basic skills problems, access to informal channels of labor market information, and making a successful transition from school to work is fully understood;

--studying alternative systems for identifying and delivering educational and training services to disadvantaged teenagers--for example, the Job Corps residential approach versus the newly developed "Street Academies", the role of the Public Employment Service versus neighborhood outreach organizations; and

--developing special longitudinal surveys of teenagers that analyze the relationship between labor market experience and criminal behavior.

Our analysis of factors that cause unemployment and nonparticipation leads us to a number of conclusions. We found that whether or not out-of-school teenagers lived in a welfare household had a large effect on the probability that they would be in the labor force. This could suggest that the work disincentive provisions built into the current AFDC program may be reducing the labor force participation of out-of-school teenagers in general and of black teenagers in particular. We conclude that consideration should be given to changing the rules of the current AFDC program so as to disregard all the earnings of dependent children (ages 14-17), regardless of their school status, when calculating the families' entitlement. We recognize that this change may, to some extent, conflict with the major objective of youth labor market policy--making sure that every youth achieves an adequate level of skill in reading and math. However, we feel that on balance the conflict could be resolved by testing the revised regulation in several states on an experimental basis (see HHS and DOL comments and GAO reply in appendix III).

Our conclusion about raising the basic reading and arithmetic skills of teenagers will also increase their participation while they are teenagers and possibly reduce measured teenage unemployment somewhat. However, as our analysis in chapters 2 and 4 showed, the basic justification for upgrading scholastic achievement is not a reduction in measured teenage unemployment, although this will be a useful by-product if it occurs. The very high teenage unemployment rate is primarily due to the high level of voluntary labor force and job turnover inherent in our culture, and this is unlikely to change because of upgrading. What we hope is that more teenagers will be able to qualify for jobs, but this will mainly influence the labor force participation rate, not the unemployment rate. The major source of the social benefits is in the employment performance of teenagers after they are teenagers--better jobs and careers.

Finally our survey of evidence on the teenage unemployment/teenage crime link was highly inconclusive. This may be surprising given the amount of popular discussion that assumes there is a relationship. However, because of the known importance of factors other than unemployment, we could not conclude that a significant relationship exists. This leads us to conclude that special longitudinal surveys of teenagers should be launched with the express purpose of studying the relationship between a teenager's labor market experiences and criminal behavior. It would be desirable for special measures of labor market experiences to be developed in order to pinpoint those teenagers who have discouraging labor market experiences (teenagers whose lack of personal qualifications for a job are so severe that they tend to answer that they are "out of the labor force" and "not interested in a job" when queried by the CPS). The studies should begin soon because it takes a number of years for the data to accumulate.

REVIEW OF LITERATURE ON NEED ANALYSIS

In this appendix, we describe and assess the criteria used by other researchers in estimating need. These studies, which largely focused on unemployment and labor force data, resulted in a wide range of need estimates, from 379,000 to 3.7 million youths. For each study, we reviewed (1) the assumptions underlying the need estimate, (2) the labor force and other indicators used to measure need, and (3) the overall size of the need group and its distribution among subgroups in the youth population. This information was used to set our assumptions about who is in need and provided a perspective to our need estimates. (See table 27 for a synopsis of the five studies reviewed.)

SWINTON STUDY

David Swinton of the Urban Institute [1] provides one approach to defining the number of teenagers in need by estimating a number of teenage employment "gaps." Using DOL data for 1977, he estimates "job gaps" that correspond to the overall teenage unemployment problem, the cyclical sensitivity aspect of the problem, the unemployment difference between teenagers/adults, and the racial differences among unemployed teenagers. Swinton's job gap estimates correspond to four aspects of the teenage employment and unemployment experiences: (1) teenage unemployment rates are always high relative to the overall unemployment rate, (2) these rates are extremely sensitive to changes in the business cycle, (3) the racial disparities in the teenage labor market are worsening, and (4) employment problems are concentrated among teenagers of both races who are disadvantaged by family income, education, or location.

Swinton's estimates of need range from 1.1 million to 3.2 million teenagers in need of jobs. The largest estimate of need is the zero unemployment job gap, representing the number of jobs that would have been required to reduce the teenage unemployment rate to zero in 1977. A slightly smaller estimate is the total teenage gap. This gap assumes that teenagers have the same unemployment rate as the general population at the rate's cyclical minimum and that racial disparities are eliminated. The adult gap estimate of 1.54 million jobs, which is approximately half of the total teenage or zero unemployment gaps, indicates the increase in employment that would give teenagers the same unemployment rate as the population as a whole. The cyclical gap, at 1.3 million jobs, would reduce unemployment to the full employment level. (Swinton assumes that the employment level in 1969 approximates the lowest level of unemployment that the economy can attain.)

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[1] David H. Swinton, "Towards Defining the Universe of Need for Youth Employment Policy," A Review of Youth Employment Problems, Programs and Policies. (Washington, D.C.: The Vice President's Task Force on Youth Employment), Vol. I, January 1980.

Finally the racial gap, which at 1.1 million jobs is the smallest need estimate, represents the number of jobs required to eliminate the racial disparities in teenage unemployment.

Swinton noted that the employment gaps are not distributed equally across the teenage population, with certain subgroups bearing a disproportionate share of the unemployment burden. In general, he finds that minorities, males, and certain geographic areas are disproportionately respresented in his various need estimates. For example, he found that the percentages of jobs that would be distributed to poverty areas is higher under the racial and total teenage gap estimates (42 and 27 percent).

LERMAN STUDY

Robert Lerman, of the Department of Labor, 1/ similarly provides several estimates of the number of teenagers in need of jobs. These estimates, which range from 734,000 to 3.3 million teenagers, vary by the economic status and labor force variables used to define the groups in need. Universe I, consisting of all people 16-24 years old who were unemployed for 15 or more weeks in 1977, is approximately 2.9 million. This group, which is largely white and male, consists primarily of out-of-school youths, over half are high school graduates.

Lerman's universe II estimate of need is based upon his "nonemployment" and "teenagers expected to work" concepts. Teenagers expected to work are those who are not enrolled in school and are without children. Nonemployment includes the officially unemployed plus those who are out of the labor force because they think that no jobs are available or that they are not qualified for any job ("discouraged unemployed"). This group includes only teenagers from economically disadvantaged families and represents the following subgroups of disadvantaged teenagers:

--Alternative A includes teenagers with 15 or more weeks of unemployment (734,000);

--Alternative B includes teenagers who are expected to work and are experiencing 15 weeks or more of nonemployment (2,086,000); and

--Alternative C includes teenagers who are not expected to work and are experiencing 15 or more weeks of unemployment plus teenagers who are expected to work and are experiencing 15 or more weeks of nonemployment (2,289,000).

1/Robert Lerman, "An Analysis of Youth Employment Problems," A Review of Youth Employment Problems, Programs and Policies, (Washington, D.C.: The Vice President's Task Force on Youth Employment), Vol. I, January 1980.

Under each alternative in universe II approximately two-thirds are in the 20-24 year old group, and the vast majority are nonstudents.

Universe III represents all teenagers who are currently jobless and experienced 15 or more weeks of nonemployment during the previous year. The 3.3 million teenagers in this category include those both in and out of school. This group also includes a larger proportion of 16-17 year olds than the other need estimates calculated by Lerman.

Finally Lerman estimates the job gap facing low income and minority teenagers. Using this measure of need, almost 2.8 million teenagers require employment services. This estimate represents the number of jobs required to bring the employment/population ratios of low income and minority teenagers up to the levels attained by white teenagers from moderate and high income families. Targeting on disadvantaged teenagers in this way results in a larger representation of nonwhite teenagers within this need estimate.

TAGGART STUDY

A third approach to estimating the need for employment and training services was provided by Robert Taggart, the former Administrator of the Office of Youth Programs in the U.S. Department of Labor. 1/ In contrast to Swinton's and Lerman's approaches, Taggart provides a range of estimates for a variety of employment and training services rather than solely for employment. He advocates a "sequential and developmental perspective" based upon the progression of teenagers in their transition from school to work. Taggart's definition of need includes four categories: pre-employment preparation, preparatory work experience, intensive training and remediation, and career entry employment. Within each of these categories, Taggart provides minimum, intermediate, and maximum estimates of teenagers in need.

First, the need for pre-employment preparation is related to deficiences in coping skills, world of work awareness, and the ability to locate and hold a job. This service would be the least targeted and would be provided to many teenagers regardless of their family incomes. The need for this service is estimated from questions on the NLS regarding knowledge of the work world and lack of work experience. The highest estimate of 3.7 million teenagers includes those with below average scores on the world of work test items who have not worked for 2 or more weeks. The

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1/Robert Taggart, "The Youth Employment Problem: A Sequential and Developmental Perspective," A Review of Youth Employment Problems, Programs and Policies, (Washington, D.C.: The Vice President's Task Force on Youth Employment), Vol. I, January 1980.

intermediate estimate (2.5 million) includes teenagers with below average scores who are from low income families and who have not worked the equivalent of a full-time job for 13 or more weeks in the past year. The lowest estimate of 774,000 only includes those low income teenagers with below average scores who have never worked 2 or more weeks.

Another need described by Taggart was preparatory work experience. This gap is measured from the CPS by adjusting the employment population ratios of lower income teenagers at each age to those of advantaged teenagers. The differences in the range of estimates (2.3--2.7 million) are due to the varying measures of economic hardship employed--i.e., 75, 85, or 100 percent of the Bureau of Labor Statistics lower living standard.

Taggart also specifies the need for career entry training and remediation for teenagers who are at the career entry point but lack basic vocational and educational skills. This need group is estimated by counting low-income people 21 years old who are unemployed, out of school, and lack a high school diploma plus those out-of-school teenagers who have a high school diploma but were unemployed 15 or more weeks the preceding year. The estimates range from 64,000 to 82,000 youths, again based on differences in the definition of economically disadvantaged. It is assumed that half of the youths in need of this service would be ready at age 18 or 19 with the other half at age 20 or 21.

Finally, Taggart estimates the need for career entry employment by counting high school graduates who are out-of-school and 21 years old, were in the labor force more than 40 weeks in the previous year and earned less than $6,000, and were in low income families. One-third of these youths would be placed in jobs at age 18 or 19, with the remainder at ages 20 or 21. These job estimates range from 48,100 to 110,000, depending on the family income cutoff used to define low income.

The assumption underlying Taggart's method of estimating need distinguish it from the other approaches that only estimate the number of teenagers in need of jobs. Taggart argues for a more comprehensive effort that would address all the dimensions of the problem, noting that improvements in one dimension would be neutralized without accompanying improvements in the other dimensions.

FELDSTEIN AND ELLWOOD STUDY

A fourth estimate of need is contained in Feldstein's and Ellwood's 1/ analysis of the teenage unemployment problem. They conclude that unemployment is not a serious problem for the

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1/Martin Feldstein and David Ellwood, "Teenage Unemployment: What is the Problem?," NBER Working Paper No. 393, (Cambridge, Mass.: National Bureau of Economic Research, Inc.), September 1979.

majority of teenage boys since many neither look for work nor have the desire to work. They noted that most unemployment periods are short and that most jobless teenagers live at home. However, they believe that unemployment is a serious problem for the five percent (379,000) of male teenagers 16-19 years old who are out of school, unemployed, and looking for full-time work. Further, they found that half of all unemployment among male teenagers is concentrated in a group of 250,000 boys. Both of these estimates include teenagers from all family income levels.

NATIONAL COMMISSION FOR EMPLOYMENT POLICY STUDY

Finally, the National Commission for Employment Policy 1/ estimated need for teenage employment programs. Using multiples of the Bureau of Labor Statistics lower living income standard as their only criterion for need, they found that 3.7 million youths 16-21 years old were in households with income below 70 percent of the standard (5.7 million youths if 100 percent of the BLS standard is used). Although these disadvantaged teenagers are predominantly white, the probability of being in a low income household is much greater for black teenagers since they make up a smaller percentage of the overall population. For the 3.7 million estimate, this probability is 46 percent for black teenagers and only 14 percent for white teenagers.

SUMMARY

Estimating the universe of need is an important step in addressing the teenage unemployment problem. The research reviewed in this section revealed a wide range of need estimates from 379,000 to 3.7 million teenagers. The differences in the magnitude of the estimates are primarily due to variations in the demographic and labor force indicators used to identify teenagers in need of services.

Except for Taggart's study, all of the approaches reviewed assumed that employment and labor force status can be relied upon to accurately identify teenagers in need of labor market services provided by the Government. Consequently, these approaches (excluding Taggart's study) appear to assume that the major type of manpower service that should be given to teenagers in need is a public service job.

1/National Commission for Employment Policy, "Size and Characteristics of the Low-Income Youth Population," unpublished staff paper, October 1979.

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Table 27

Summary of Estimates and Need Criteria Used in Various Need Studies

(ooo omitted)

Source	Need Criteria	Total in Need
Swinton--Job Gaps	16-24 years old	
Zero Unemployment	Unemployed	3,226
Total Youths	Unemployed	3,196
Adult	Unemployed	1,540
Cyclical	Unemployed	1,297
Racial	Unemployed	1,136
Lerman		
Universe I	Unemployed more than 15 weeks	2,865
Universe II		
A	Economically disadvantaged and unemployed more than 15 weeks	734
B	Economically disadvantaged, unemployed and discouraged	2,086
C	Economically disadvantaged, unemployed and discouraged	2,287
Universe III	Unemployed and discouraged workers	3,335
Universe IV	Economically disadvantaged, and unemployed plus out of the labor force	2,776
Taggart a/	14-21 years old	
Pre-employment Assistance		
Minimum	Never worked more than 2 weeks	774
Intermediate	Unemployed plus never worked more than 13 weeks	2,549
Maximum	Unemployed plus never worked more than 2 weeks	3,736
Work Experience		
Minimum	Unemployed plus not in the labor force	2,283
Intermediate	Unemployed plus not in the labor force	2,547
Maximum	Unemployed plus not in the labor force	2,682

Table 27 (cont'd.)

Source	Need Criteria	Total in Need
Training/Remediation		
Minimum	All 21 years old, unemployed, H.S. drop out	64
Intermediate	H.S. graduates, unemployed 15 or more weeks (varies with poverty income level def. used)	64
Maximum		82
Career Employment		
Minimum	21 year old H.S. graduates, earned less than $6,000 the year before (varies with poverty income level def. used)	
Intermediate		48
Maximum		164
Feldstein and Ellwood	16-19 only	
	Unemployed and looking for a full-time job	379
National Commission for Employment Policy	16-21 years old	
1	Not available	3,712
2	Not available	5,670

a/These estimates exclude U.S. Department of Labor program participants.

LIMITATIONS OF STATISTICAL METHODOLOGY USED TO STUDY UNEMPLOYMENT AND CRIME

The sections immediately following contain descriptions of a few (but by no means all) of the many problems that occur in the studies by economists we reviewed. The first three sections relate primarily to the statistical methodology used to interpret the data on unemployment and crime. The last section discusses the quality of the data itself.

CORRELATION VS. CAUSATION

Almost all the studies reviewed contain data showing a positive correlation between unemployment and crime. Correlation, however, only measures or indicates association. In fact, it only indicates the degree of a linear relationship between X and Y. Under what conditions can cause be inferred from correlation?

Generally, at least three concepts are required to support the notion of cause. The first of these is consistency, that is, all other things being equal in the population under consideration, the correlation between X and Y should be consistent across various subgroups of the population (e.g., if it holds for blacks it should hold for whites). The next is experimental evidence, or cause and effect. In other words, if we can intervene and change X for some individuals then the corresponding Y's will respond accordingly. The third is the development of a theory or model that can explain the cause/effect relation in terms of some plausible hypothesis. Of these three notions, only one, consistency, can be confirmed by uncontrolled observation of data.

It is important to realize that almost all of the studies do no more than demonstrate consistency. In fact, even with consistency we encountered problems. Not all the results reported in the empirical studies are consistent, and no one has checked for cause and effect in the manner of the physical sciences since the ideal situation is unattainable. We simply cannot select a large number of teenagers and randomly assign them to two groups, an experimental group that will be forced into unemployment and a control group that is employed, and sit back and observe them to see if the crime rate in the former is higher than in the latter.

How serious are these drawbacks? Experimental evidence, our second item, presents the real problem. Nobody would argue that unemployment is the only cause of crime. It has been extensively demonstrated that psychological and sociological factors are important independent causes of crime. However, of the works we reviewed, only Fleisher 1/ really confronts the experimental evidence (or "specification" problem as it is known to economists) issue. According to Fleisher, "The problem of specification has been treated at length, and it has been pointed out that precious little evidence can be brought to bear on the question of specification of the delinquency model."

Fleisher's own attempt at specification is interesting in that it vividly illustrates how crude even the best existing evidence is. From Census and other sources he measured the percent of women over 14 who were divorced or separated in all the communities that were the units of observation in his regression equation. This measure was assumed to be highly correlated with the proportion of teenagers living in broken homes in the communities. He also measured the percentage of the community that were recent migrants. Then he entered these two variables in his multiple regression equation along with his income and unemployment variables. This specification assumes that between communities with the same percent of women divorced or separated and the same percentage of new migrants, income and unemployment will not be correlated with any other important determinants of differences in teenage unemployment rates. But obviously many other important possible determinants exist, such as ethnic and religious mix of the community, the quality of the school system, the quality of the police force, etc.

THE ECOLOGICAL FALLACY

The literature abounds with observations such as the following: Does unemployment cause crime? Yes and no, say witnesses at a recent Joint Economic Committee hearing on the social costs of unemployment. Close correlations exist between the unemployment rate and levels of many social pathologies, including homicide, mortality, violent and property crimes, suicide, and admission to prisons and mental institutions, according to Johns Hopkins University Professor M. Harvey Brenner. On an individual level, however, there is "weak, if any support, for the expected relationship between unemployment and crime" says Anne Witte, an economics professor at the University of North Carolina.

Actually, there is no inconsistency. The apparent contradiction can be explained rather easily. It results from a phenomenon that is referred to in the literature as ecological correlation.

An ecological correlation connects the values of groups of individuals rather than the values of the individuals composing the group. For example, in a study that considered the relation-

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1/Belton M. Fleisher, "The Effect of Income on Delinquency," The American Economic Review, March 1966, 56(1), pp. 118-137.

ship between suicide and literacy, E. Durkheim 1/ took clusters of provinces and found that "public instruction and suicide were almost perfectly correlated." However, if he had used individual provinces, the correlation would have been weaker, and if he had looked at individuals, the correlation would have been quite small.

Since the values of groups are used in the economists' studies, they almost certainly overstate the correlation among individuals. However, most researchers do not take this difference in values into account and instead attempt to relate their broad findings from aggregate data to individuals. This causes calculated correlations to be artifically high.

OTHER LIMITATIONS WITH STATISTICAL METHODOLOGY

Almost every study that employs regression analysis is burdened to one degree or another by several econometric problems that include: multi-collinearity, significance, and autocorrelation. We briefly discuss the importance of these problems.

Multi-collinearity

When we explained the use of multiple regression, we designated certain variables as independent. These were the variables whose changes we thought important in explaining changes in the dependent variable. In using independent variables, one hopes that they are uncorrelated with one another. When the independent variables are significantly correlated with one another, regression techniques have difficulty in separating the influence of each independent variable on the dependent variable. These influences are allocated in a more arbitrary and unreliable fashion as the degree of correlation increases. As a result, it becomes difficult to say anything about the separate influence of the independent variables. Moreover, the existence of multi-collinearity raises the R^2 of the regression.

As an example of multi-collinearity, Fleisher 2/ found in his study that his variable measuring the percentage of teenagers living in broken homes was so highly correlated with his income and unemployment variables that he was unable to isolate the net effect of each. Similarly, in the study by Phillips, the overall teenage crime rate was regressed on measures of black and white unemployment. However, these were so highly correlated that Phillips was unable to make separate estimates by race.

1/E. Durkheim, Suicide. New York: MacMillan, 1951. p. 164.

2/Fleisher, op. cit.

Significance

The reports cited above abound with statements about the significance of the variables used in the various regressions. We have discussed the meaning of statistical significance, but will repeat some of the discussion here.

One meaning of significance is with regard to sampling error. This is "statistical significance." A coefficient derived from a sample may differ from zero, but is this due to sampling variation or does it reflect a real difference from zero?

There are two schools of thought on the value of statistical significance tests in nonexperimental research (all the reports we reviewed are nonexperimental studies). One school maintains that these tests are generally not applicable in nonexperimental research. The other school claims that tests of significance do have a legitimate place in such research and that their function is to answer (with a certain probability of error) the question, "Is there anything in the data that needs to be explained?"

The other meaning of significance is with regard to the question "Are the observed differences important?" What is "important" is, admittedly, judgmental and might well depend upon the individual investigator and the purpose at hand. On the other hand, the significance level of a test depends on the sample size. With a sufficiently large sample, even a small difference can be statistically significant.

Autocorrelation in the time series

If the data used in a study are annual time series, then classical regression analysis must assume that the successive deviations of the dependent variable from its predicted value ("error terms") are not related to each other. Statistical procedures exist to test for the presence of independent error terms 1/ (the test specified by Durbin and Watson). When the test rejects the assumption of independence, the error terms are said to be autocorrelated. When autocorrelation is present, it poses potentially grave problems in interpreting the results of the regression. Correction for autocorrelation has been known to alter both the sign and statistical significance of the coefficients of the independent variables. Unfortunately, much work using time series data in regressions is bedeviled by autocorrelation. Frequently, in our opinion, this difficult problem in the studies we reviewed was not treated in sufficient detail.

1/The error results for several reasons. It may occur because of an omitted independent variable or because the variables themselves have been measured with error.

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DATA LIMITATIONS

Many sources of data are used in the different studies we reviewed. In addition to the methodological problems just discussed, the basic validity and reliability of the data itself is in question.

Some sources of data, such as Census data, are quite good. Others are not so good. In particular, all the empirical studies made at least some use of the FBI's Uniform Crime Report (UCR). In our opinion, only Fleisher pays anywhere near sufficient attention to UCR's limitations. Additionally, crime indices in general have many problems. As Judith Innis deNeufville explains 1/

> ...First, the U.S. crime index, like those in most developed countries, is based on police statistics... Second, the police reports are subject to such variation in operation and recordkeeping practices...that figures have been known to double in a year or two after a change in management. Third, in the U.S., at least, the returns are incomplete because of a failure of many of the locally controlled police forces to cooperate... Fourth, the index represents not all crimes, not a representative group of crimes, not the most serious crimes, but a selection of the presumably serious crimes that happen to be most accurately reported. There is no reason to assume that these particular crimes move in the same way as crime generally, however.

Another problem occurs that is even more difficult to overcome. In several situations, data on variables in the equations are just not available. In such cases, other data, or proxies, are used to estimate the desired, but missing, data. Of course, this is not intrinsically bad. However, when it is necessary to make such estimates, we feel that very careful reasoning should accompany the process. In several places this reasoning is so tenuous that it seems that the availability of the data actually used in the estimation process was the only criterion.

To summarize, such of the available data is inappropriate for the purpose at hand, and many of them are of poor quality. If we are ever to make any real progress in our understanding of the relationship between crime and teenage unemployment (or unemployment in general), we must have data that are better suited to the purpose at hand and of better quality.

1/Judith deNeufville. Social Indications and Public Policy, (Elsevier Scientific Publishing Co., 1975) pp. 101-119.

CONCLUSIONS

The claim that teenage unemployment has some effect on the teenage crime rate is plausible. With the exception of Ehrlich, all the empirical work we reviewed found that the unemployment rate was positively associated with the crime rate. However, we do not think that the empirical work sufficiently established, beyond a reasonable doubt, that unemployment has a significant effect on crime. Two factors lead us to that conclusion.

First, a lack of appropriate data exists--the data are generally of poor quality and most of the models are based upon various assumptions about individual behavior, but aggregate data are used. In order to be able to make a solid case for a causal connection between unemployment and crime, we have to deal with that connection at the individual level. It is not cities or States that commit crimes, it is individuals. To use averages or rates is to attribute far more homogeneity to those commiting crimes than is reasonable.

Second, the basic statistical technique used, applying regression analysis to nonexperimental data, can never by itself completely establish a causal relationship. Once a reasonable causal model is specified, regression analysis can, if data are available to measure all the important causal variables in the model, provide some convincing evidence of a causal relationship in the absence of experimental data. However, as we have pointed out the studies we have surveyed have not come close to this standard. They have not been able to specify and measure enough of the potentially important causal variables other than unemployment.

Hence, we conclude that the results reported in these studies are far too tentative to be useful for policy analysis. We are convinced that economic policy should not be implemented solely on the basis of the premature (and very possibly false) findings reported. The point is not to ignore these studies, but to take them with the proverbial grain of salt.

UNITED STATES DEPARTMENT OF EDUCATION
WASHINGTON, D.C. 20202

ASSISTANT SECRETARY
FOR VOCATIONAL AND ADULT EDUCATION

AUG 5 1981

Mr. Gregory J. Ahart
Director, Human Resources Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Ahart:

The Secretary has asked that I respond to your request for comments on your draft report entitled, "Teenage Unemployment: A Misunderstood Problem."

As a general comment, our review found that the report analyzes many variables within a statistical framework to identify factors contributing to teenage unemployment and is quite comprehensive. The report also includes a great deal of useful information for persons interested in this problem area. We do find the report seriously deficient, however, in terms of recommendations for alleviating the problem. In short, many questions are asked; few, if any, are answered.

We offer the following more specific comments:

Effects of Teenage Unemployment on Criminal Behavior

An abundance of research exists on the correlation between unemployment and crime and yet the exact nature of the problem is still not fully understood. We can assume that unemployment plays a significant part in the lives of most youth and adult offenders. Following contact with the criminal justice system, a person's future job prospects grow dimmer, thus contributing to the cycle.

In terms of causes, we agree that a lack of basic skills contributes to the problem. We also believe that many youth offenders may be handicapped (Smith & Hockenberry, 1980). Perhaps 15 percent may be mentally retarded (Smith, 1978) and 30-40 percent learning disabled (Law Enforcement Assistance Administration).

In terms of addressing the problem of young people and crime, we believe that vocational and alternative education, carefully coordinated with basic skills training, can be an effective treatment.

Page 2 - Mr. Gregory J. Ahart

DOL Employment and Training Programs

We agree that manpower programs need to include additional remedial skills and informational services. We also feel that training in specific occupational skills is needed to make the difference. Our familiarity with DOL programs leads us to conclude that those programs which are most successful are closely coordinated with local vocational education programs.

Vocational Education in Secondary Schools

The report discusses at length certain behavioral and general employability traits which enhance one's job prospects. Basic skills, career guidance, and additional information are mentioned as possible responses to the unemployment problem. The secondary school setting is specifically cited as the principle focus for these activities.

Conspicuous by its absence is any discussion of vocational education's role in secondary schools. There are over 7.5 million students in secondary schools who receive both general employability (the so-called "personality" traits) and occupational skills in conjunction with their basic skills. Over 90 percent of those who complete these programs are able to find employment (National Center for Education Statistics, 1979).

Vocational education has also been found to be a deterrent to dropping out of high school. Numerous studies exist showing other positive effects of vocational education on program participants.

NCES Report on Youth Employment

The National Center for Education Statistics has recently published a contractor's report on "Youth Employment During High School." You may find this report useful in constructing your final version. A copy is enclosed.

We appreciate the opportunity to comment on your draft report. If you would like to discuss our comments further, please contact Mr. Al Marra at 245-2626.

Sincerely,

Robert M. Worthington
Assistant Secretary
for Vocational and Adult Education

Enclosure

GAO RESPONSE

Effects of teenage unemployment on criminal behavior

GAO agrees that there is a possible link between lack of basic qualifications for a job and crime, but there is no hard evidence to substantiate this conjecture. Our survey showed that variables related to a youths' relationship with his parents have a strong influence on whether he will engage in criminal behavior. Therefore, we reiterate the importance of doing further research into the causes of crime.

DOL employment and training programs

GAO generally agrees with DOE's recommendation but again stresses the need for additional research into the kinds of programmatic approaches (Job Corps, Street Academies, etc.) that will raise the scholastic achievement level of disadvantaged youths.

Vocational education in secondary schools

GAO agrees that the established system of vocational education at the secondary school level is an important and integral part of the overall secondary school system. The target groups we isolated, however, may include youths who have failed in the vocational courses as well as in the academic and general courses. It may be that the traditional vocational courses and degree tracks have a role to play in improving the overall scholastic performance of our target group youths, but again we stress the need for further research and evaluation.

DEPARTMENT OF HEALTH & HUMAN SERVICES

Office of Inspector General

Washington, D.C. 20201

10 AUG 1981

Mr. Gregory J. Ahart
Director, Human Resources
Division
United States General
Accounting Office
Washington, D.C. 20548

Dear Mr. Ahart:

The Secretary asked that I respond to your request for our comments on your draft report entitled, "Teenage Unemployment: A Misunderstood Problem." The enclosed comments represent the tentative position of the Department and are subject to reevaluation when the final version of this report is received.

We appreciate the opportunity to comment on this draft report before its publication.

Sincerely yours,

Richard P. Kusserow
Inspector General

Enclosure

COMMENTS OF THE DEPARTMENT OF HEALTH AND HUMAN SERVICES ON THE GENERAL ACCOUNTING OFFICE'S DRAFT REPORT ENTITLED, "TEENAGE UNEMPLOYMENT: A MISUNDERSTOOD PROBLEM," PAD-81-34, DATED JULY 10, 1981

This draft report makes no specific recommendations, but the report does describe several conclusions from the examination of statistical data, which is the basis of the report. Their principal conclusion is that programs for reducing the educational achievement gap between disadvantaged and advantaged teenagers should be stressed rather than programs to provide work experience. GAO also concludes that consideration should be given to changing the treatment of Aid to Families With Dependent Children (AFDC) teenagers' earnings to disregard all earnings of 14 to 17 year-olds, not just the earnings of those who are students. This conclusion stems from a statistical correlation the auditors found between out-of-school teenagers' unemployment and their presence in AFDC households.

Under present law--Section 402(a)(8)(A) of the Social Security Act--the earnings of a dependent child are, in general, fully excluded in calculating the family income if the child is a student, but not if he/she is out of school.

We disagree with GAO's conclusion about a change in the law. We view the current law not as a "disincentive" to employment, but as an "incentive" to teenagers to remain in, or return to educational or training activities.

The intent of the present law is to keep children in school through secondary education on the premise that every child needs and is entitled to a basic education to be successful in today's society. When that intent is not achieved, children 16 and 17 years old are required under current law and regulation to register for the Work Incentive (WIN) Program when they are no longer in school as a condition of continued AFDC eligibility. For children under 16 who are out of school, the States decide what is casual and inconsequential income and need not be counted in determining the family grant.

Under new AFDC legislation, if the State's Plan includes a Community Work Experience Program, teenagers aged 16-18 who are not attending school on a full-time basis could be required to participate by the State.

GAO RESPONSE

The current law is both a disincentive to work and an incentive to stay in school. The preferences and opportunities of individual teenagers on AFDC will determine which of these effects is the most important. For those youths who leave or want to leave school, and for whom immediate work would be a better career start, the regulation is a definite work disincentive. For a youth who would be better off in the long run if he stayed in school, the current regulation does reduce the temptation to drop out of school and take a full-time job--it is an incentive to stay in school.

If the regulation is changed to allow all youths to disregard their earnings there will be two effects. First, some of the youths who left school and did not work and those who would have been better off out of school but were deterred by the regulation will enter the labor force--a gain to society and to the individual teenager. Second, some youths who had stayed in school and were made better off by staying will leave school because of the greater earnings opportunities now available to non-students--a loss to society and to the individual.

We still feel, however, that "consideration should be given to making changes . . ." in the direction of disregarding the earnings of out-of-school youths 16-17 years old. The number of non-working out-of-school youths and the number of in-school youths who would be positively affected may be quite large relative to the number of youths who are gaining from staying in school and who would be tempted out of school if the regulation were changed. Because of the uncertainty involved, the best approach might be to try out the new regulation in a few States on an experimental basis. Follow up studies on effected youths could be performed to determine if the sample of those who left school to take a full time job contained many who would have been better off staying in school.

U.S. Department of Labor

Assistant Secretary for
Employment and Training
Washington, D.C. 20210

AUG 12 1981

Mr. Gregory J. Ahart
Director
Human Resources Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Ahart:

This is in reply to your letter to the Secretary of Labor, Raymond J. Donovan, requesting comments on the draft GAO report entitled, "Teenage Unemployment: A Misunderstood Problem."

The Department's response is enclosed.

The Department appreciates the opportunity to comment on this report.

Sincerely,

Albert Angrisani

ALBERT ANGRISANI
Assistant Secretary of Labor

Enclosure

U.S. Department of Labor's Response To The Draft General Accounting Office Report Entitled --

"Teenage Unemployment: A Misunderstood Problem"

Recommendation # 1

The high measured rate of teenage unemployment does not accurately indicate either the degree or the type of labor market problems facing teenagers. Measures of illiteracy must be stressed as much as, if not more than, measures of unemployment.

Response: The Department concurs.

Comments: The Department acknowledges that the universe of need among teenagers seeking to participate meaningfully in the labor market is broader than that indicated by unemployment statistics alone. As we move towards an increasingly technical, highly skilled labor market, it is clear that those lacking basic educational skills--whether they are employed, unemployed or labor market "drop-outs" --are at a distinct competitive disadvantage. In recognition of this fact, the array of programs authorized under the Youth Employment and Demonstration Projects Act of 1977 and continued through the CETA reauthorization of 1978 are designed to serve a broad population range: in-school youth, underemployed youth, school drop-outs, unemployed youth, and to a limited extent, youth who are not economically disadvantaged.

The Department would add the following provisos to the draft's documentation of the universe of need:

- The use of CPS data may result in an underestimation of the universe because the respondent tends to be the head of household rather than the youth him/herself;

- The limitation of the universe of need to the economically disadvantaged precludes assistance for those "advantaged" youth who are illiterate (Table 14);
- The failure to include 14-15 year olds in the universe of need overlooks a population segment currently served under CETA through the Youth Employment and Training Program (YETP) and the Summer Youth Employment Program (SYEP);
- The predominant reliance on unemployment data dealing with male youth shortchanges the female universe of need, and totally excludes from discussion the critical relationship between teenage pregnancy and unemployment; and
- The inclusion of substantive data on the increasing literacy needs of the labor market would bolster the argument for the interrelationship between illiteracy and unemployment--e.g., the recorded decline in unskilled jobs, the projected composition of the labor market in the coming decade, the literacy requirements of "growth" occupations, etc.

Recommendation #2

Programs designed to alleviate the labor market problems facing teenagers should be shifted from a work experience emphasis towards providing remedial and informational services to all those teenagers who are deficient in those areas.

Response: The Department concurs

Comments: As noted in the Youth Employment and Demonstration Projects Act of 1977, and reiterated in the CETA reauthorization of 1978 Title IV, Part A, Section 411: "It is explicitly not the purpose of this part to provide make-work opportunities for unemployed youth. Rather, it is the purpose to provide youth, and particularly economically disadvantaged youth, with opportunities to learn and earn that will lead to meaningful employment or self-employment opportunities after they have completed the program." The Department is committed to fulfilling this statutory mandate through the development and implementation of multi-dimensional strategies for youth.

It is unclear which "PSE" activities the draft references in its discussion of the Department's programs for youth. Among the array of youth programs authorized under Title IV of CETA, only one is largely work experience in nature: the Summer Youth Employment Program (SYEP).

In assessing the effectiveness of the Department's programs in combating youth unemployment over the past decade, the impact of other variables must be weighed as well. Examples include the increased share that teenagers comprised of the potential labor force, the general upward trend in the unemployment rate during this period, and, as the draft itself notes, the possible affect of increased coverage by the minimum wage law.

The Youth Employment and Training Program (YETP) provides a broad range of transition services including remedial education and labor market information. The Youth Incentive Entitlement Pilot Projects (YIEPP) are specifically designed to encourage retention in school through the incentive of a guaranteed job. It should be noted that although a given program strategy offers a variety of services, this does not necessarily coincide with such services being utilized by all program participants (Table 16).

The universe of need relative to youth and their labor market problems cannot be considered as an undifferentiated mass. Although the report presents some very insightful analysis by disaggregating the data several ways, it should be improved by breaking down the youth population whenever the data permit by finer age categories (16-17, 18-19, 20-21) matched with school enrollment status.

For example, a highly respected study by Mathematica Inc. (1980) on Job Corps enrollees highlighted the following particulars:

- Only 25% of the enrollees who entered Job Corps at age 16 completed training compared to 40% who entered at age 19 and over.
- Among completors, those 18 years of age or younger have a recorded placement rate of 70% with one-half of that number in training-related jobs.
- The placement rate for completors 21 years of age and older was 77% with two-thirds of that number in training related jobs.

Similarly, the disparate expectations of the employer community in the competitive labor market must be considered in addition to the broad range of potential outcomes for different participant age groups. Accordingly, the Department is currently studying a variety of strategies relating to effective means to meet the needs of youth and employers from these perspectives.

Recommendation # 3

Programs for reducing the educational achievement gap between disadvantaged and advantaged teenagers need to be stressed.

Response: The Department does not concur.

Comments: In conformance with the data contained in this draft, this premise needs to be restated. Table 12 of Chapter 3 of this draft indicates that there is below normal educational attainment for a higher number of advantaged than disadvantaged youth. Table 14 of the same chapter demonstrates that illiteracy rates are higher for advantaged youth than disadvantaged youth. Therefore, it appears that this conclusion would be better stated as stressing programs that would reduce the number of teenagers who show evidence of illiteracy, regardless of economic status.

Recommendation #4

The development of micro data bases that contain detailed family background, educational achievement, and labor force information on a longitudinal basis should be encouraged.

Response: The Department concurs.

Comments: Assuming that sufficient financial resources are available, the Department agrees that the development of information of this nature should be encouraged.

Recommendation #5

Alternative systems for identifying and delivering education and training services to disadvantaged teenagers should be studied.

Response: The Department does not concur.

Comments: This has already occurred to a large extent through the numerous research, demonstration and evaluation activities conducted under the authority of the Youth Employment and Demonstration Projects Act of 1977. As provided for in Title II, Part C, Subpart 3, Section 348 (a)(i) of that statute, "The Secretary of Labor is authorized...to carry out innovative and experimental programs to test new approaches for dealing with the unemployment problems of youth...such programs shall include, where appropriate, cooperative arrangements with educational agencies to provide special programs and services for eligible participants enrolled in secondary schools, postsecondary educational institutions and technical and trade schools...."

From the Department's perspective, the task at hand is no longer knowledge development; rather, the issue is transmission and utilization of what research and demonstration have already documented. The Department has established a system of centralized management assistance to "broker" such information directly to CETA prime sponsors. Continuing knowledge utilization relative to what we have learned regarding a variety of training, employment and educational strategies for youth will remain a Departmental priority for the balance of the fiscal year.

Recommendation # 6

Further research is needed to explore the connection between teenage unemployment and crime.

Response: The Department does not concur.

Comments: As the draft notes, "the claim that a teenager's inability to find a job can have an effect on his or her propensity to commit a crime is intuitively plausible". Departmental research efforts, such as an analysis of the Supported Work demonstration by MDRC Inc. support the draft's observation that such a cause/effect relationship is difficult to document because of the number of possible variables involved, the difficulty of collecting reliable data on criminal activity, and the seemingly uneven impact of program intervention on criminal activity.

The Department does not support further research of a premise that is inherently difficult to precisely document, and, in fact, should be confirmed by common sense alone. As the draft notes, "teenagers unqualified for jobs are a serious problem even if they do not commit crimes... that they may also be contributing to crime makes the situation even more urgent". The Department agrees that the relationship exists, and does not wish to devote further resources to confirm this hypothesis.

Recommendation # 7

Consideration should be given to changing the rules of the current AFDC program so as to disregard all the earnings of dependent children (ages 14-17), regardless of their school status, when calculating the families' entitlement.

Response: The Department concurs.

Comments: This approach was sanctioned in the 1977 amendments to CETA and in the reauthorization of CETA on October 27, 1978. The latter citation from Title IV, Part A, Subpart 4, Section 446 is as follows: "Earnings and allowances received by any youth under this part shall be disregarded in determining the eligibility of the youth's family for, and the amount of, any benefits based on need under Federal or federally assisted programs".

The continuing problem in administering this statutory provision has been the difficulty in implementing national-level interagency arrangements among the Department of Labor and the Departments of Health and Human Services, Housing and Urban Development, and Agriculture at the operational level. The local caseworker who makes the determination of entitlement may not be aware of the statutory provisions of legislation implemented by another agency.

Obviously, in this instance, interagency and intragency communications need to be strengthened. Also, other agencies might encourage such provisions in their authorizing legislation. In addition, we may wish to extend this provision to other CETA titles to maintain a work incentive among disadvantaged youth.

As a related issue, the draft conclusion that living in an AFDC household, per se, is a negative influence on teenage employment warrants further exploration. The impact of a number of variables--earnings disregard, parental role models, educational opportunities, etc. -- should be sorted out through additional research to a finer degree.

GAO RESPONSE

Item #1

We recognize that most of the refinements mentioned would have improved our need estimates, although we do not think any of them are so significant that they invalidate our estimates. Also, one of the provisos concerning reliance on data dealing with male youths is not true. In chapter 2, where we discussed the meaning and significance of the high measured rate of unemployment, we used mostly data on the male rate. In chapter 3, however, we used data on both sexes throughout. We do agree though that more detailed data on female characteristics would have been helpful.

Item #2

We concur that the need analysis would have been more helpful if it had been broken down by more characteristics than unemployment experience and scholastic achievement. We do not fully agree, however, that our analysis of the effectiveness of the Department's program over looked "the general trend in the unemployment rate during this period. . . ." Most analysts agree that the upward trend in the overall rate of unemployment can be acounted for by compositional factors, such as the age/sex mix of the labor force and a small upward trend in teenage unemployment.

Item #3

There appears to be some confusion here between rates of illiteracy and absolute numbers of illiterate people. In table 12 of chapter 3 it is shown that there is a higher incidence of below normal attainment for in-school disadvantaged youth than for in-school advantaged youth even though there are more (in absolute terms) below normal advantaged youth (895,100 vs. 333,000). But, there are generally many more advantaged than disadvantaged youth (17 million vs. 3 million).

Item #4

No comment necessary.

Item #5

GAO agrees that the existing knowledge should be transmitted and used. What we meant, however, was not so much that DOL should fund more projects but that they should keep monitoring what developments were occuring in the various States and localities that represent the spontaneous efforts of State and local governments, private sector organizations, and joint ventures between private organizations and local governments. This is a more "dynamic" version of the clearinghouse function and is one that we hope DOL would seek to achieve. Also, we do not agree that there is enough DOL funded research on the broad and fundamental aspects of alternative delivery systems. For example, the comment mentions that research and demonstration results will be distributed to CETA prime sponsors, implying that the CETA prime sponsor system itself is beyond being able to negatively influence the outcomes of the system. GAO thinks that more research on the effectiveness of the existing CETA system is needed.

Item #6

GAO does not concur with this DOL comment because we think it is tantamount to saying that because it is difficult to pin down the cause of a disease that research on the disease should be halted. GAO feels that research on the determinants of criminal behavior among young people should be a major research priority. If the DOL does not want to do the research than another department should be given lead responsibility.

Item #7

GAO concurs with this comment. We also heartily agree with DOL's recommendation that more research on the topic is needed.

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